The Origins of British Hillforts: A comparative study of Late Bronze Age hillfort origins in the Atlantic West

Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor in Philosophy by Lorrae Campbell

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ABSTRACT

The Late Bronze Age in Britain (*c.* 1250–750 BC) was a period of economic and social reorganisation: agricultural and settlement patterns; funerary and depositional practices - all saw significant change and development. This thesis examines the evidence for the occupation and enclosure of hilltops in the Atlantic west of Britain during this formative period. Focusing on the reasons *why* communities started to come together at this time to construct these impressive monuments, this thesis provides information about how these communities were organising the landscape during a time when the first effects of climatic deterioration was beginning to be felt. Hilltop enclosures, rather than being marginal locations away from population centres, instead played an important role for communities navigating their way from the safe and settled world of the Middle Bronze Age to the emerging realities of life in a more unpredictable environment.

The Atlantic west of Britain, which here encompasses Wales and the Marches and southwest England, is an area that until very recently has lagged behind the better known and more comprehensively studied central southern region of England. This thesis endeavours to show that far from being a peripheral region, communities in the Atlantic west were developing hilltop sites right across the landscape, providing a safe and central location for communal gatherings and pastoral farming. Maritime links across the Irish Sea to the Late Bronze Age hillforts of Ireland (O'Brien and O'Driscoll 2017) are explored to see whether the Atlantic west of Britain was a part of a wider region with a westwards focus, rather than one with links eastwards towards central southern England.

By examining hilltop sites in terms of landscape location, settlement evidence, and material culture, the social drivers behind the development of these magnificent monuments have been reconstructed. They were built in locations designed to be seen across the landscape, providing a physical manifestation of community belonging for the people who constructed them. Whilst settlement evidence is sparse, the act of enclosing the space appears to have been the main driver. This, alongside the availability of water sources, suggests that they acted as hubs supporting seasonal transhumance activities associated with pastoral agriculture, akin to lowland middens. Together with the evidence for personal items, tools and weapons found on these hilltop sites, it is suggested that they also provided a location for communal gatherings and feasting designed to support community cohesion for a society in a state of flux. Ceramic evidence supports this, with tentative indications of interconnectivity being seen across the landscape. The results of this investigation will help contextualise the place in society that these hilltop sites had for the communities that built them in the Atlantic west, furthering our understanding of the Late Bronze Age as a transitional time when people were attempting to create stability in a changing world.

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This thesis has been a long time in the making. For over 8 years it has been a constant in my life – providing a focus, a distraction and a place of retreat. At times it has made me want to turn off the computer and walk away, but mostly it gave me a place to stretch, as Poirot would say, 'the 'little grey cells'. I would like to thank first and foremost my family for their constant encouragement. My husband Ewen, who could not have been more supportive and has kept me going throughout this long process, unfailing in his patience, interest and practicality. My children Neve and Fraser have had hillforts play a part in a large chunk of their childhoods, from enforced treks to their windy summits to a mother spending time writing her PhD in 'Digging Up Dirt' (Fraser's words, not mine). Whilst they may not have understood my fascination with them, they never begrudged me the time I spent on them. I would like to thank my parents for their lifelong encouragement of my education and interests, and my sister Kerry for always keeping it real. This thesis was proof-read by my father and father-in-law, both engineers, who not only did me a great favour, but learned a little in the process. I thank them for their patience.

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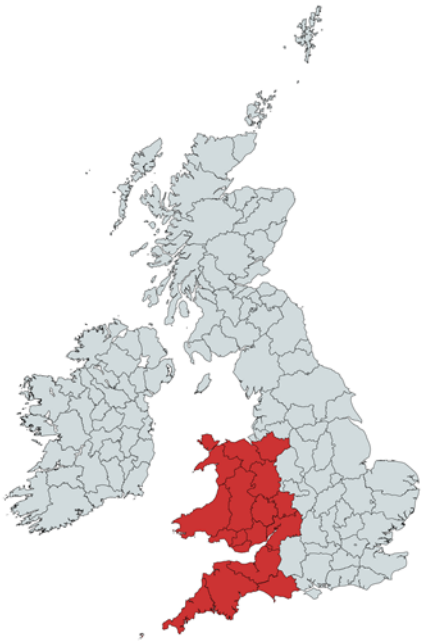
INTRODUCTION

This thesis grew out of my MA dissertation, in which I examined five British Late Bronze Age hilltop sites (Eildon Hill North, Traprain Law, Dinorben, Beeston Castle and The Breiddin). These sites have all been well-excavated, with a rich material culture showing a significant presence on the hilltops with enclosure, occupation, craftworking and to a lesser degree, settlement all taking place. My conclusion was that these hilltop sites may have provided a place where communities came together during this transitional period of time, bringing with them the most important aspects of daily life. Once I decided to go ahead with my PhD, I wanted to extend this research as I knew that my MA dissertation had barely scratched the surface of understanding these under-researched sites. Building on the work of academics such as Brück (2007; 2013) and McOmish (2018), this thesis seeks a deeper understanding of the reasons why these sites were constructed than could be achieved in an MA dissertation. I wanted to test whether what I was seeing happening at this small group of well-excavated sites could also be seen at other, less studied ones. By necessity, the geographical spread had to be reduced to provide a more workable dataset, so the decision was made to concentrate on Wales and the Marches and southwest England (Figure 0.1). A key aspect of the research was to concentrate on areas outside of central southern England, areas that until recently have been poorly understood and much less studied. I felt that not only was it important to shine a light on what was happening in these areas, but also it gave me an opportunity to conduct research that would be adding, in a significant way, to our knowledge of these regions in the Late Bronze Age (1250-750 BC)



English counties	Welsh counties
Cheshire	Denbighshire
Shropshire	Flintshire
Worcestershire	Conwy
Herefordshire	Anglesey
Gloucestershire	Gwynedd
Bristol	Powys
Somerset	Ceredigion
Devon	Pembrokeshire
Dorset	Carmarthenshire
Cornwall	Monmouthshire

Figure 0.1 – Geographical extent of the study area.

Throughout this thesis, the sites examined will be referred to as hilltop enclosures and not hillforts. It has become more apparent in recent years that Late Bronze Age hilltop enclosures and Iron Age hillforts, whilst often built on the same site and showing superficial similarities, are far from being comparable structures and are, in fact, very different classes of monuments that served different purposes within their communities. Historic England provides brief definitions of both monument classes:

> ‘Hilltop enclosures are defined as sub-rectangular or elongated areas of ground, usually between 10ha and 40ha in size, situated on hilltops or plateaux and surrounded by slight univallate earthworks. They date to between the Bronze Age and Early Iron Age (eighth–fifth centuries BC).’
>
> (Historic England 2002)

> ‘Hillforts are defended places, surrounded by one or more circuits of banks and ditches, generally placed on hilltops, ridges, spurs or promontories. They were built and occupied during the period from about 900 to 100 BC.’
>
> (Historic England 2018)

0.1 Aims and research questions

Upon first reading of the definitions above, it would be tempting to class some Late Bronze Age hilltop enclosures as comparable structures to Iron Age hillforts. Some, such as the well excavated examples tackled in my MA dissertation, do superficially look very much like hillforts in many respects. However, there is a growing body of evidence that Late Bronze Age hilltop enclosures played a very different role in society than Iron Age hillforts. The central tenet of this thesis, therefore, is to examine in as much detail as possible, all the available evidence from Late Bronze Age hilltop sites to ascertain what the rationale was behind their construction. The main aim is to explore *why* communities started to come together during the Late Bronze Age to create these impressive monuments. By examining these hilltop sites in terms of where they were built, how they were settled and utilised, and what they were being used for once constructed, it is my intention to arrive at a more complete understanding of the social drivers behind their construction and the role they played within Late Bronze Age society. This is not an exercise to merely classify the different types of evidence present, but to contextualise this information to throw light on how hilltop sites were being utilised. Considerable effort was expended by farming communities to create these hilltop enclosures, therefore the social imperatives that drove their creation would have been significant. This brings me to the second main research question – were these hilltop enclosures being created as a result of the possible influence of climatic change? There is increasingly compelling evidence being produced of a climatic downturn taking place during the Late Bronze Age, therefore it is important to examine whether these sites were being created by communities grappling with what this would mean for them.

This thesis was begun in 2013, and therefore the data collection took place before the *Atlas of Hillforts* website was created, which would have made the job much easier. As a result, it took two years of work to just create the dataset used within this research. An initial list of over 1000 potential sites was examined, initially using the Historic England and National Monument Record of Wales online catalogues of archaeological sites. Further scrutiny of each site, using various sources such as HER databases, county archaeological trusts and unpublished reports in the grey literature finally led to 40 sites (26 in Wales/Marches and 14 in SW England) being selected for analysis (details of these sites can be found in Chapter Four). Whilst fully acknowledging the varying levels of data quality (discussed

later in this work), all sites used here either have Late Bronze Age evidence present or are believed to be Late Bronze Age because of typological similarities to nearby sites dated to this time period. These 40 sites are not an exhaustive list of all Late Bronze Age hilltop sites in these areas. Since this dataset was created, work carried out on the Llyn peninsular in NW Wales has shown that ten probable Late Bronze Age double ringwork enclosures exist in this area (only two of which have been excavated). Whilst one of these sites, Castell Odo, was included as it was excavated and published in the 1950s, the much more recently excavated site of Meillionydd was not, as its excavation and publication did not happen in time to be included in the dataset. It is interesting to note, however, that the evidence at Meillionydd mirrors that at Castell Odo (K. Waddington pers. comm. 2021). Also in NW Wales, a group of promontory hillforts exist on Anglesey that are unexcavated but similar in form to those found in SW Wales and SW England included in this thesis. They have not been included here, as they have no dating evidence and no typologically similar sites with dating evidence nearby, however their existence is worthy of mention as another possible grouping that could add to the overall number of Late Bronze Age sites (K. Waddington pers. comm. 2021). As investigations continue on the Llyn peninsular, as well as at many other locations, the list of Late Bronze Age hilltop sites will continue to expand.

0.2 The research context for Late Bronze Age settlement

Hilltop enclosures were only one settlement type occurring at this time. In order to be able to analyse their place in society, it is important to understand Late Bronze Age settlement as a whole. Settlement patterns were changing during this period, with a greater range of new settlement types. During the Middle Bronze Age, settlement evidence suggests that the majority of sites were 'diffuse and non-intensive' (Halstead 2011,64), consisting mainly of small clusters of two to five roundhouses with the accompanying domestic and agricultural features (Brück 1999; Ellison 1981; Pope 2015). These settlements have been characterised as individual households, possibly single-family units, involved in mixed farming and small-scale exchange set within formalised field systems, and were a relatively uniform site type throughout the Middle Bronze Age (Brück 2007, 25; Burgess 1980a; Lawson 2000, 271). Whilst this settlement type certainly continued into the Late Bronze Age, a greater diversity of settlements can be seen developing. When Brück (2007, 25) examined the character of Late Bronze Age settlement in southern Britain she used a random sample of 68 LBA settlement sites, taking in the period *c.* 1150-600 BC. These sample types were diverse; 17 hillforts, 11 ringworks, 11 other enclosed settlements, four midden sites, two timber platforms in wetland locations, and only 28 open settlements similar to their MBA predecessors. Interestingly, although the range of site types had greatly increased, the percentages of enclosed sites (58%) to unenclosed sites (42%) had changed little from the Middle Bronze Age – 54% enclosed to 46% unenclosed (Brück 1997). Alongside this increase in site types, the Late Bronze Age also saw an upsurge in their scale and specialisation. Whilst it is certainly true that many settlement sites continued to be small-scale, family-based units, for example Furze Platt, Berkshire (Lobb 1980), some sites begin to show evidence of large-scale, community-level events not seen in the preceding Middle Bronze Age period (Brück 2007, 26; Lawson *et al.* 2000; McOmish 1996; Needham *et al.* 1996).

0.2.1 Late Bronze Age Lowland Landscapes: midden sites and timber platforms

Midden sites primarily occur in southern Britain, with a few northern outliers (Fig. 0.2). These sites are a Late Bronze Age development, traditionally dating from the 10th to the sixth/seventh centuries BC, however recent work done by Waddington *et al.* (2019) has pushed the end date forward to the mid-late fifth century BC. Middens show evidence of significant numbers of people regularly gathering together, possibly for social events which included feasting. The site at Potterne, in the Vale of Pewsey in Wiltshire, is huge in scale; over 3.5 hectares in size and 2m thick. Excavations of around 1% of the midden area yielded a faunal assemblage of more than 130,000 bone fragments (Madgwick *et al*. 2012). Faunal remains at Runnymede Bridge show evidence of a large proportion of pig bones, specifically roasting joints, as well as sheep carcasses being cooked whole (Brück 2007: Needham and Spence 1996: Serjeantson, 2007). Pottery fabrics from the lower levels at Potterne were overwhelmingly of local manufacture, but the upper levels showed 20% of the assemblage came from non-local sources (Morris 2000, 166; Waddington 2009, 162) The pottery evidence from East Chisenbury, a site that has yielded 65,000 cubic metres of original mound material, includes many large and unabraded sherds, leading McOmish (1996) to propose this was the result of episodic feasting activity for a large number of people, seeing such sites as 'one end product of ritual activity' (McOmish 1996, 75). Strontium isotope analysis was carried out on five samples of pig bones from the Late Bronze Age midden site at Potterne, Wiltshire, and one pig was found to have travelled a significant distance to get there (Madgwick *et al.* 2012). Similar analysis at the Late Bronze Age / Early Iron Age midden site of Llanmaes, Glamorgan has shown that three pigs were not local, and whilst it is difficult to ascertain where exactly they were from, it was a substantial distance (>20 km), well beyond the expected range of the site (Madgwick and Mulville 2015, 636). This recurrent, deliberate and concentrated deposition at sites throughout southern and middle England shows not only a physical change to settlement patterns but also a conceptual development within the LBA landscape. It is not yet truly understood if these midden sites were permanently or periodically occupied by a reasonable sized population or had a small permanent population that swelled at specific times of the year by a much larger, temporary influx of people (Lawson 2000, 269; Waddington 2008). However, many LBA settlements were identified at the base of the midden deposits. It therefore seems likely that the communal feasting that created these sites of monumental scale had their genesis in a societal development that was a marked change from what can be seen in the previous Middle Bronze Age (Waddington *et al.* 2019).

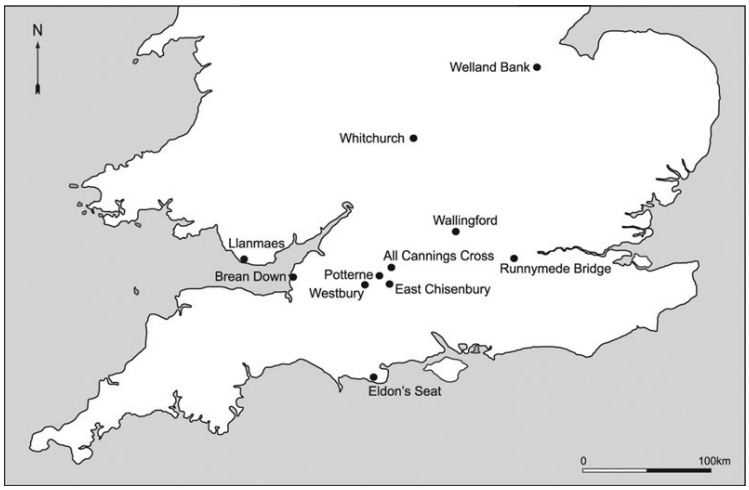


Figure 0.2 – Key Late Bronze Age / Early Iron Age midden sites (Waddington 2009, fig. 0.2).

This change can also be seen in other settlement types. Timber platforms, many with associated trackways, have been discovered at a number of wetland sites such as Willingdon Levels, Sussex (Greatorex 1997), Flag Fen (Pryor and Bamford 2010) and Must Farm, Cambridgeshire (Knight 2016; Taylor and Pryor 1990). Buildings were constructed on timber platforms, which had been placed on posts driven into peat and marine clay (Greatorex 1997, 14; Taylor and Pryor 1990, 426), and radiocarbon dated to the Late Bronze Age. Whilst they sit in wetland landscapes that had been settled since the Neolithic (Knight 2016), these LBA platforms formed a new phase of occupation within their environment. Due to the exceptional preservation of the artefacts found at these sites, including a large range of organic material, they give a rare glimpse into the activities being carried out there. Whilst the range of domestic items indicated people did live there, it had been argued that their impressive construction and lack of human parasite ova, which should be present at intensively occupied sites, meant that these were special or ritual sites (Harding and Healy 2007; Taylor and Pryor 1990, 431). However, the recent, remarkable discoveries at Must Farm have led to a rethink of these sites as 'cult' centres, with access and control of watercourses and their attendant possibilities for contact and exchange seeming to be more likely (Knight 2016). The discovery of six Bronze Age boats, deliberately scuttled over the period 1300-700 BC in the watercourse adjacent to the Must Farm site strengthens the argument that usage and 'control' of the surrounding watercourses was central to this community's existence (Gibson *et al.* 2012). This ties in with the development of settlement and extensive artefact-rich midden deposits on eyots and islands in the Thames at such sites as Runnymede Bridge (Needham 1991) and Wallingford (Cromarty *et al.* 2006). Therefore, it is possible that whilst the form of occupation was different, with structures built directly over the wetland instead of adjacent to it, the need to directly access watercourses was a development seen across a number of Late Bronze Age landscapes.

0.2.2 Late Bronze Age lowland enclosures: Ringworks

Enclosed settlement sites have existed since the Neolithic, with Pounds and Tor enclosures, found exclusively in the upland areas of SW England being the earliest form. Small, embanked enclosures existed throughout the Middle Bronze Age, and are the most frequently seen type of enclosed Bronze

Age settlement (McOmish 2018). However, two other forms of enclosed settlement seem to have been a mainly Late Bronze Age development; hilltop enclosures, the subject of this thesis, and ringworks, which date from the 13th to the 8th centuries BC (see Fig. 0.4 below for timeline). Ringworks have a restricted geographical spread being mainly found on the eastern side of England and generally close to major riverine networks like the River Thames (McOmish 2018, 3). They have a clear-cut circular boundary including a bank and external ditch and their size can vary from a diameter of just 40 m at Mucking North Ring, Essex (Fig. 0.3) (Bond 1988) to over 120 m at Thrapston, Northamptonshire (Hull 2001). Some ringworks have multiple entrances, and the interior generally has a small number of post-built structures, sometimes with one large, dominating building at the centre (McOmish 2018, 4). They generally contain copious amounts of artefacts, including fine pottery and metalwork, as well as metalworking evidence. The nature of these sites and the quality of the artefacts found within them, combined with their locations close to major watercourses would suggest that they were a development within Late Bronze Age society, similar to the timber platform sites detailed above: important sites within their surroundings, influencing the landscape in which they lie.

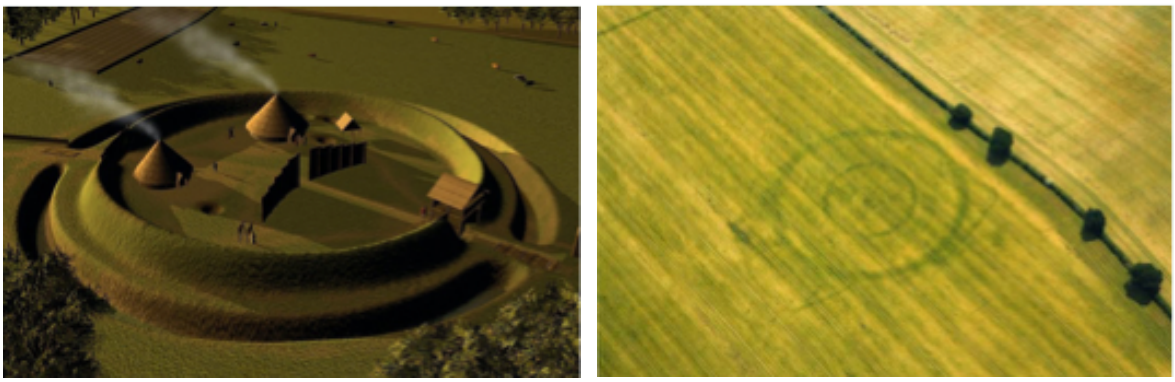


Figure 0.3 – A reconstruction of Mucking North Ring, Essex and an aerial photograph of Thwing, East Yorkshire (McOmish 2018, 6).

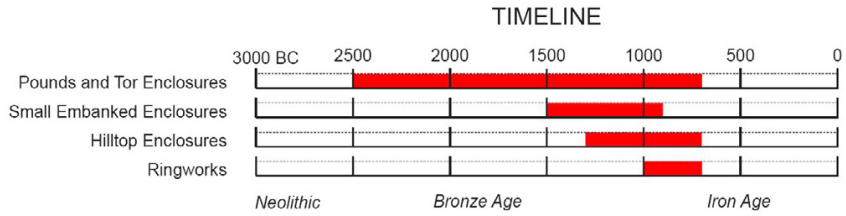


Figure 0.4 – Timeline of enclosures in England (McOmish 2018, 11).

What has become clear is that the Late Bronze Age saw a period of rapid extension of land use and the expansion of scale and variety of settlement types. Settlements within existing landscapes were changing and developing, such as timber platforms in wetland areas and hilltop enclosures in the uplands. The traditional household-level upland landscapes of the Middle Bronze Age were being replaced in many areas by the intensive communal-level development of lowland environments between the 12th–10th centuries BC. Settlement types unknown in the Middle Bronze Age were emerging, ones that demanded community-level co-operation and resources such as the construction

of linear boundaries, or sites of large-scale gatherings and deliberate deposition such as middens. This suggests that society was fundamentally changing, and these developing settlement types are reflections of this societal change. It is no coincidence that all these developments occurred in the Late Bronze Age, as we will see later in this thesis, depositional activity at this time was also changing and intensifying. What is beginning to emerge from the archaeological record is that during the Late Bronze Age from the 12th century BC onwards, there was a time of great development and even upheaval. Climatic shifts saw changing agricultural practices, lowland areas were becoming more extensively exploited and settlement types were changing and developing to take advantage of this. It is within this framework of changing settlement patterns and intensive exploitation that I am going to examine the evidence for the settlement of hilltop sites in the Late Bronze Age.

0.3 Structure of thesis

To enable hilltop enclosures to be fully contextualised within these changing settlement patterns, a database of 20 non-hilltop, lowland settlements from the same chronological and geographical area was created (further details can be found in Chapter Two and Appendix Five These sites range from midden sites, through foreshore settlements to enclosed and unenclosed settlement sites. Taken together, the hilltop and non-hilltop site databases provide a comprehensive snapshot of how communities were organising themselves during the Late Bronze Age. Using this data, analysis of how hilltop sites were being used was undertaken, organising into the following structure: Chapter One examines the history of the study of British hillfort origins. Starting in the 17th century, it traces how hillforts have been understood, specifically to what period they were believed to have dated from. Chapter Two provides an overview of the theories influential in hillfort studies, and the methodological approaches used in this thesis. It also gives a brief overview of recent work done on Late Bronze Age hillforts in Ireland, a strand of comparison that will run through this work. The climatic deterioration taking place during the Late Bronze Age is examined in Chapter Three, looking at the latest developments in paleoclimatic studies and how this may have affected Late Bronze Age society. Three data-driven chapters follow, firstly locating Late Bronze Age hilltop sites, secondly how they were settled, and finally examining the evidence of how they were inhabited. These chapters endeavour to get to the heart of why these sites were being built by examining all the available information, and by comparing this to settlement patterns seen on the lowland sites. Chapter Seven then attempts to bring all the data analysed together in terms of who, what, where, when and why these hilltop sites were created in the Late Bronze Age, ending with a brief concluding chapter objectively reviewing the analysis undertaken.

CHAPTER ONE

A HISTORY OF BRITISH HILLFORT ORIGINS

Hillforts are one of Britain's most important prehistoric monument groups, whether they are small, almost ephemeral promontory forts on coastlines facing the wrath of the Atlantic Ocean in Pembrokeshire or large, impressive hillforts that dominate their surrounding countryside like Maiden Castle in Dorset; they have been objects of fascination for centuries. This chapter will look at the history of British hillfort origins and how they have been investigated and interpreted over time, which will provide the backdrop to my research into the Late Bronze Age hillfort sites in the Atlantic west of Britain. Whilst the history of hillfort studies will be looked at in general, I will endeavour to pick out and follow the first strands of understanding of just how truly ancient these monuments actually are; an understanding that culminates in this research. The question of how hillforts have been viewed by different generations of archaeologists is a fascinating one that provides an insight into the development of British archaeology as a whole. By understanding how theories of how their origins have developed and evolved it is possible to trace much of the history of archaeological endeavour within this country over the last few centuries.

1.1 Before archaeology: Druidic, Roman, Dark Age or Viking?

It has been argued that during the Middle Ages, hillforts were believed to belong to folk heroes – for example Julius Caesar, King Arthur or Alfred the Great – or to be the product of Roman or Viking encampments; with early names given to these monuments reflecting this belief, such as Caesar's Camp in Surrey and Hampshire and Dane's Camp in Northamptonshire (Cunliffe 2003, 9; Harding 1974, 54). Prior to the 17th century then, we had a chronological range anywhere from the 1st century BC to the 10th century AD. However, the 17th century saw the first mentions of hillforts within antiquarian writings and the beginning of academic musings about their origins. In Devon, Tristram Risden (*c.*1632), whilst surveying the antiquities of Devon, thought hillforts may be the ruins of castles. However, he did consider that at Cadbury Castle hillfort (Devon) there were the remains of ancient earthworks (Cobley 2015, 262; Risden *c.*1631, 78). In another part of this study area, Robert Plot (1686) wrote about a hillfort on top of a hill overlooking Shropshire but did not make any observations about its possible date (Lynch and Lynch 1968, 38; Plot 1686, 397). By the 18th century, opinion was divided about the origins of hillforts. Daniel Defoe believed that hillforts such as Chiselbury (Wiltshire) were of Roman origin (Defoe 1769, 327), whilst Stukeley first postulated that they might have had native British origins. Writing about Great Dornford (Wiltshire) he said that 'I doubt not but this was a camp of the Britons, and perhaps an oppidum (fortified town)' (Stukeley 1724, 138). He believed that the hillfort was used by the community for sheltering cattle and was the first to associate a hillfort with the surrounding 'Celtic' fields system (Lynch and Lynch 1968, 38; Stukeley 1724). Strange (1772), whilst writing about a hillfort in Brecknockshire, described it as British, however he gave no reason for this assertion (Strange 1772, 320). Some antiquarians believed that they had been reused by subsequent communities, with Wise (1738) stating that a Berkshire hillfort had been built by the Roman's and reused by the Dane's (Wise

1738, 22; Lynch and Lynch 1968, 39). Therefore, by the end of the 18th century the first attempts had been made to place hillforts within a recognisable chronology, with some, such as Stukeley going beyond this and postulating about their possible uses.

The early 19th century saw more attempts to place hillforts within a prehistoric context. Writing about the area around Axminster in Devon, James Davidson (1833) believed that they were built by the British and called them 'forts' (Cobley 2015, 257; Davidson 1833), whilst Woollcoombe (1839) believed Devon hillforts to be camps that acted as places of refuge and attributing them for the first time to a specific people; the Iron Age Dumnonii tribe (Woollcoombe 1839, 5). Whilst he did not actually call them Iron Age, this was an important early attempt to place them within a known prehistoric chronology. Shortt (1841) argued against assuming that every camp was Roman, as he observed that Roman camps were square (Shortt 1841, 3-12). He believed that the oval shaped camps were British and that the circular ones were Viking, although he did say that these could equally be sites of Druidical worship (Cobley 2015, 262; Shortt 1841, 19). In 1842, Shortt visited Cadbury Castle (Devon) to survey the site, planning a cross section of the hillfort (Fig. 1.1) believing it to be too small to be Roman. Interestingly, a survey of the same hillfort undertaken in 2009 / 2010 (Fig. 1.2) resulted in a plan very similar to Shortt's (Cobley 2015, 263; Wilkes *et al.* 2012, 243). Therefore, by the mid-19th century there had been important steps in establishing the chronology of hillfort building, with the first attempts at dating them to specific prehistoric periods.

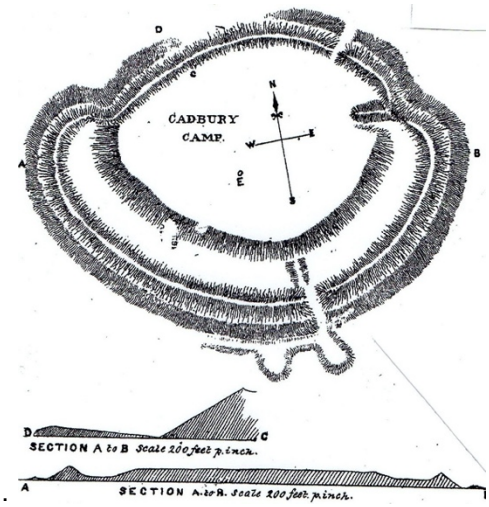


Figure 1.1 - Shortt's 1842 plan of Cadbury Castle (Shortt 1842, opp. 29).

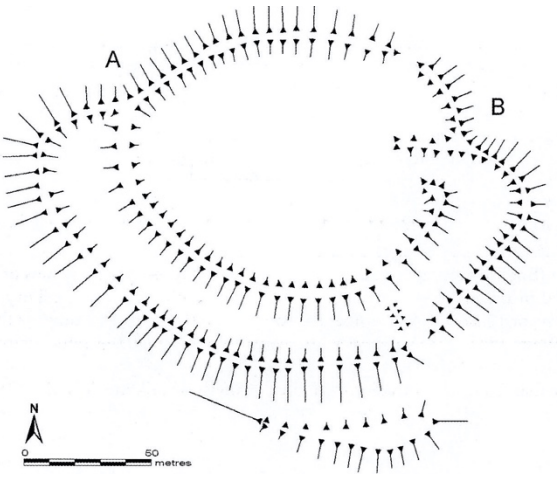


Figure 1.2 - 2012 plan of Cadbury Castle (Wilkes *et al.* 2012, 243).

It is important to note however, that prehistoric studies from the 17th to the early 19th century were hampered by the almost universal belief that creation took place in 4004 BC, a chronology developed in 1636 by Archbishop Ussher, and that held sway for the best part of two hundred years (Brice 1982, 18). It was the confluence of two events from the mid-19th century onwards that enabled the antiquity of these structures to be more fully investigated. First was the waning of belief in Bishop Ussher's Chronology of Creation from the 1860s onwards, led by eminent theologians such as W.H. Green and G.F. Wright, who picked apart the biblical justification for Ussher's beliefs (Numbers 2000, 258).

Coupled with the publication of Charles Darwin's *On the Origin of Species* in 1859, it created an atmosphere where antiquarians were more open to the idea of greater antiquity for many prehistoric monuments. Secondly, 1850 saw the first recorded excavation of a hillfort site at Uffington Castle (Oxfordshire) (Harding 1974, 54), with the results of this and other pioneering excavations adding concrete artefactual evidence to the discussion about the antiquity of hillforts.

1.2 1850s-1900s: Confirming an Iron Age date

Much of the early excavations of hillforts, which generally took place under the auspices of local antiquarians, can be traced through the county records of where they took place. The first hillfort excavation took place in Oxfordshire during 1850 at Uffington Castle (Harding 1974, 54). The same excavator, Edwin Martyn-Atkins, began work further west within my study area, along with Charles Dymond and Rev. Francis Warre, all three being very enthusiastic investigators of the ancient history of Somerset. They surveyed and excavated Worlebury hillfort near Weston-Super-Mare between 1851-1852, with Warre publishing reports in the Somerset Archaeological and Natural History Society Journal (Warre 1851; 1853). Warre (1853,) in an Appendix to his 1851 article, mused on the origins of the site and believed it to be of British construction; 'the pottery is almost all of British manufacture, some of extreme antiquity, some probably Belgic, the work of the last two or three centuries before the Roman invasion' (Warre 1853, 124). This is interesting as he separates the Belgic Iron Age pottery from that which he believed to be even more ancient, the first hint of an antiquity of this monument that might go beyond the Iron Age. At the same time as these early excavations in Britain, French antiquarians were beginning to explore the origins of their hillforts. Unlike Britain, however, the French were primarily motivated by identifying places written about by Julius Caesar in *The Conquest of Gaul*. Early excavators were especially keen to find the building technique known as the murus gallicus, a type of defensive hillfort wall, and by the mid-1860s, about the time of Martyn-Atkins and Lane Fox's investigations into British hillforts, the first Gallic sites were being explored. In 1866, Vicomte d'Aboville found what he believed was the first evidence for a murus gallicus at Mont Beuvray (a single nail), and by 1868, Castagné had identified a rampart at Murcens that was of the same construction as Caesar's description of a murus gallicus (Collis 2010, 27). Therefore, whilst French antiquarians seemed content to search for evidence to back up Caesar's writing, British antiquarians, who had no such preoccupations were free to be more wide-ranging in their investigations.

During the second half of the 19th century, the belief that began in 1734 with Stukeley that hillforts were not built by Romans or Danes, but had a more ancient origin was becoming more universally examined and accepted. In 1865, William Barnes looked at the names of various 'British earthworks' in Dorset and ascribed such meanings as Cadbury – from Cad, meaning a battle, and Banbury, from Ban, meaning high or a prominence, attributing both to the pre-Roman indigenous language (Barnes 1865, 285). The first Ordnance Survey maps printed in the 1860s attributed many hillforts to the Druids as the 1860 map of Yeavering Bell (Northumberland) shows (Fig. 1.3). The idea of hillforts having a prehistoric origin came to a more national attention with Col. Augustus Henry Lane Fox (later known as Pitt Rivers) who was a hugely important figure in archaeology as a whole, and specifically in tracing the origins of hillforts. Whilst staying in Brighton in 1868, Lane Fox undertook an examination of the earthworks of the Sussex Downs. From this he produced a paper called *An examination into the character and*

probable origin of the Hill Forts of Sussex for the Society of Antiquaries in 1869, identifying that these monuments had a pre-Roman origin, calling the time he believed they came from a 'remote period' (Lane Fox 1869, 30). During his discussion of Ditchling hillfort (Sussex) he said that 'the discovery of Roman coins in their vicinity, though it certainly implies Roman occupation, does not necessarily prove them to be of Roman construction' (Lane Fox 1869, 40). His excavations at Caburn Camp (Sussex) in 1877 and 1878, during which he found artefacts including Celtic coins, cemented for him the idea that these structures had been built during the Iron Age (Lane Fox 1881). This developed county antiquarians such as Warre's work in using archaeological evidence to substantiate the dating of hillforts to the Iron Age, and therefore it is only in the later 19th century that the identification of hillforts as having prehistoric origins occurred with some certainty.

Figure 1.3 – First Ordnance Survey map of Yeavering Bell dating to 1860. (© Crown Copyright Database Right (2014). Ordnance Survey).

It is interesting to look at how these mid-19th century antiquarians understood the purpose of these hillforts to have been. Whilst the understanding that they had Iron Age origins was beginning to gain traction, theories about their purpose were also beginning to be formed. Whilst many antiquaries wrote about hillforts being used in response to Roman occupation (Lane Fox 1869; Scarth 1875; Warre 1853), some efforts were being made to investigate further. As far back as 1875, Scarth believed that the first occupation of 'camps' was made by colonists to this country who used them to 'extend their dominion into the vales' (Scarth 1875, 100) and as a place to farm sheep. He goes on to describe the developed hillfort of Little Salisbury (Wiltshire) as having divisions that created an allotted space for a family or clan and an avenue of stones at the base of the hill as being 'the place for the administration of justice' (Scarth 1875, 107). Whilst describing the hillforts at Stantonbury and Maes Knoll (Wiltshire) he imagined them to be guarding the Druidical temple of Stanton Drew (Scarth 1875, 111). He also believed the word 'maes' after which the hillfort was named meant battle in the Celtic British, as well as the Armorican language, again emphasising the pre-Roman origin of this hillfort (Scarth 1875, 113). What is most

fascinating about this work is that Scarth compares the function of British hillforts to those of similar native New Zealand encampments or 'pahs' (Scarth 1875, 116-117), an idea that was revisited many years later by Raymond Firth (1927), Aileen Fox (1976) and Ian Armit (2007).

In 1875, G.T. Clark, writing about the Wiltshire hillfort of Old Sarum said it had been 'selected at some remote period and fortified with appliances of a simple character ……. which at one time was the resort of inhabitants whose huts and wigwams, and the monuments of their superstition, covered the adjacent downs.' (Clark 1875, 292). Clark was convinced that the early history of this hillfort, built before the coming of the Belgae and Rome, was closely associated with the nearby monuments of the Stonehenge complex. He ascribes a long history to it, with the native British, then Belgic or Celtic peoples, Romans, English (Anglo-Saxon) and finally Normans all leaving their mark on the place. However, he very poetically reminds the reader that it is the work of the most ancient British people that remains the most prominent to this day (Clark 1875, 295). At this early stage of hillfort studies, it can be shown that many antiquarians were already ascribing an Iron Age or Celtic date to the development of hillforts, together with indigenous builders, not those of Continental origin. This went against the prevailing belief of the time that 'civilisation', including the tradition of monumental building, had been imported into Britain from southern Europe (Evans 1896; Fotiadis 2005; Reinach 1893).

1.3 1900s-1920s: Race and potential Bronze Age origins

The late 19th and early 20th centuries saw preoccupation with questions of race and responsibility for the technological and monumental advances being seen in the archaeological record. Many academics believed that the origins for these advances, including hillfort building, lay in the more civilised Mediterranean and had been introduced into this country; seeking verification for this theory through excavation (Allcroft 1908; Boast 2009; Dawkins 1880; Evans 1896; Munro 1897). Others, whilst not dismissing this theory, sought at least to question it. The first classification of prehistoric earthworks in both typology and chronology was *Earthworks of England* in 1908 by A. Hadrian Allcroft. He perceptively noted that differences of hillfort types do not necessarily mean differences in race (Allcroft 1908, 34; Harding 1974, 54). He believed that hilltop enclosures were first built to protect stock from predators and that 'there is no question that the hill-top camps are, as a class, the finest and the most elaborate of all. From what has been said, it would follow that some of them are also amongst the oldest and so far as they have been examined, this appears to be the fact' (Allcroft 1908, 33). He believed them to be pre-Belgic invasion (i.e. pre 4th century BC), but did not attempt to date them further. Others thought differently; Maud Cunnington excavated at many sites in Wiltshire between the years 1907 and 1932 (Fig. 1.4) and in her 1908 report on the Oliver's Camp excavation, she acknowledged that the state of understanding of dating hillforts was very poor, and that other than purely Roman sites, little could be conclusively known about their dating. She believed that it would only be through detailed excavation that 'different races will eventually be recognised' and could only say that Oliver's Camp was earlier than the Roman period, but later than the Bronze Age (Cunnington 1908, 416). Her article, written the same year as Allcroft's, shows that whereas he acknowledged different hillfort typology did not necessarily mean different races, she believed that it was only through examining the differences in hillforts that differences in races could be observed.

Figure 1.4 - Maud Cunnington's hillfort excavations in Wiltshire between 1907 – 1932.
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Cunnington is important, as it was she who, after the Oliver's Camp excavation, first suggested the possibility of hillforts as having origins as far back as the Bronze Age. In 1911, she described Knap Hill Camp as 'of great antiquity' (Cunnington 1911, 56), considering it to have possible Bronze Age artefacts, distinguishing the 'old camp' with a single rampart and non-continuous ditch, from the later 'celtic' settlement. She discussed whether one of the hillforts she excavated, Figsbury Ring, may also have had a Bronze Age origin when five sherds of Bronze Age pottery were found on the site. However, she decided that 'this can scarcely be considered to afford evidence that the earliest part of the earthwork dates from that period……Scanty though it is, the only decided evidence of habitation is that by the people of the Early Iron Age' (Cunnington 1924, 50). Cunnington was certainly an early pioneer in the dating of hillfort origins, with an interest in establishing a workable chronology for these monuments, however she seemed to be convinced that hillforts were Iron Age in date. Even when evidence existed for an earlier date, such as at Figsbury Ring and later when early Hengistbury pottery (then dated to the Hallstatt period) was found at Lidbury Camp, she dismissed it as 'not safe to assume that the occupation at Lidbury …. is as early as that claimed for this type of pottery' (Cunnington 1917, 21). This conviction that hillforts dated solely to the Iron Age was a bias that persisted throughout hillfort studies for many years, and a topic that I will return to later.

Many other major excavations took place in these early decades of the twentieth century, including those of E. Cecil Curwen at Caburn, The Trundle, Cissbury, Hollingsbury and Thundersbarrow in Sussex between 1926 and 1932 (Curwen *et al.* 1931; Curwen 1939). In the Welsh Borders, Dinorben was excavated by Willoughby Gardner between 1912 and 1922 (Gardner 1926; Gardner and Savory, 1967), and in the Scottish Borders, Traprain Law was investigated throughout the first two decades by Curle and Cree (Curle 1915, 1916, 1920: Cree 1922, 1924). Whilst Curwen and Gardner dated the earliest development of their hillfort sites to the Early Iron Age (Curwen *et al.* 1931; Gardner 1926), Cree and Curle noted numerous Bronze Age 'relics of that cultural epoch' at Traprain Law (Curle 1920,

64), even postulating that the 'native pottery' was probably Bronze Age and was similar to that found by Cunnington at Knap Hill 'in a settlement showing partially a synchronous culture' (Curle *et al.*1916, 87). Whilst illustrating that Curle and Cree were open to the idea of Bronze Age hillfort development, Cunnington herself was not, persisting in the belief that they developed in the Early Iron Age.

1.4 1930s: History, Invasionism, and 4th century BC building

By the late 1920s, the dominant theory in British archaeology was 'culture history' (Johnson 2010, 17). Initially developed in Germany at the end of the nineteenth century, it was brought to Britain in the early decades of the twentieth century by the eminent Australian archaeologist V. G. Childe (Childe 1925, 1928, 1929). He tried to identify 'cultures' or 'culture-groups' by their distinctive traits, whether this was material culture, settlement types or burial rites, which he combined with principles of diffusionism (Childe 1925). Childe was careful to differentiate between artefacts such as weapon types, which could change quite rapidly according their users a distinct advantage once adopted, and more 'cultural' practices, such as burial rites, which change with less frequency and show more evidence for an ethnic identity. Childe's goal was to trace peoples from historical sources back into their prehistoric past, looking initially at the Danube and its place in prehistory as a conduit for movement of people, ideas and technologies (Childe 1929; 1930). In the 1930s, these 'cultures' were then directly correlated along ethnic lines, labelling such groups as 'Celts' or 'Germans', and using these distinctive traits to record their origin and document how and to where these cultures expanded. Whilst not ascribing to the right-wing attitudes of some of his contemporaries in 1930s Europe, notably Gustaf Kossinna, he was still convinced there was a basic ethnic difference between different peoples (Childe 1929; Collis 2010, 28; Harris 1994, 3; Trigger 1994, 12).

In the early 1930s, Christopher Hawkes set out to try and put hillforts into some kind of historical and archaeological context. Hawkes, taking on the new approach being championed by Childe, put both a geographical and typographical methodology into hillfort studies, trying to assign individual hillforts to specific time periods in the Iron Age and more specifically, to different peoples or cultures (Hawkes 1931). He used evidence mainly from material culture, specifically brooches and decorated pottery as well as typological similarities between hillforts, as the basis of his work (Hawkes 1931, 77). He envisaged hillfort building to be the result of waves of invasions coming from continental Europe from the 4th century BC onwards, with these in-comers being responsible for the most large and complex monuments (*ibid.* 88).

Building on classical sources such as Julius Caesar who had reported waves of invasions from Europe, saying 'the population of the south of Britain along the coast are Belgic immigrants, who at first crossing for the sake of war and plunder, afterwards remained to settle' (Julius Caesar, Gallic War V 12; Long 1911, 129) Hawkes developed the ABC system in 1931 (Hawkes 1931). He based his work on hillforts that had been excavated and dated, acknowledging that this consisted of only a fraction of the number of hillforts as a whole (*ibid.* 61). He described three main movements of peoples into Britain that gave rise to the three phases of the British Iron Age (Fig. 1.4). The first movement was essentially Hallstatt peoples arriving in southeast England around the 6th century BC forming the Iron Age A culture. According to Hawkes, this initiated a wave of building 'camps of refuge', either single rampart hillforts,

or the re-use and enlargement of Late Bronze Age 'kraals' or stockades (Hawkes 1931, 66-67). The second wave, Iron Age B, arrived in two parts. The first from Spain and Brittany in the 4th century BC moved into Dorset and built the massive multivallate hillforts seen there. A separate movement was made into eastern Britain, especially Yorkshire and Cambridgeshire, from Gaul in the 3rd century BC. He envisaged these hillforts as a response by native defenders to a 3rd century BC threat of war.

> 'That invasion must have let loose bands of Celtic warriors from across the Channel over large parts of the south country, and against them the A2 inhabitants had to undertake the great work of building these hillforts and settlement defences.'
>
> (Hawkes 1940, 333)

The next wave was a movement of Belgic people into Kent and Essex and then on into southern central England forming the Iron Age C in the 1st century BC, as reported by Julius Caesar (Hawkes 1931: Payne *et al*. 2006). This was a less intensive hillfort building phase but did include the beginning of the development of oppida, or established towns (Hawkes 1931, 89). So, for Hawkes, western hillforts were built by people of Spanish/French origin and eastern hillforts were indigenous defensive structures against Gaulish attack. By the 1930s then, the origins of western hillforts were now believed to be in the 4th century BC, and earlier than those to the east. This view of hillfort building quickly became ingrained; during a speech by V. Gordon Childe to a meeting of Edinburgh prehistorians in February 1932, he stated that the presence of 'Gaulish walled forts near Abernathy and Fordendenny were proofs of a hitherto unsuspected landing of Celts about 250 BC, who must have sailed direct from Gaul without passing through England' (Childe 1932, 223). He preferred to believe an imagined and unsubstantiated Celtic landing than the possibility of indigenous development, based solely on 'Gaulish' typology.

Whilst Hawke's ABC system was accepted by the majority of scholars, there were some who disputed this view. Maud Cunnington queried whether the second Belgic invasion had actually occurred at all, questioning whether the introduction of bead-rimmed pottery was not the result of an invasion, but merely the introduction of a new technology: the potter's wheel (Cunnington 1932; Cunliffe 2005, 11). Hawkes, however, successfully challenged her criticism and from then on, the second Belgic invasion was accepted (Hawkes and Dunning 1932). The reasons why Hawkes was so easily able to refute Cunnington's challenge, which was based on solid archaeological foundations, is a fascinating glimpse into the politics of archaeology in the 1930s. At this time, Cunnington was a 53 year-old woman with no formal training in archaeology. She had developed an interest in the subject as a result of her marriage into an antiquarian family and progressed this interest through the local archaeological society of Wiltshire, becoming its first woman president in 1933 (Champion 1998, 177; Roberts 2002). Hawkes, however, was a 28-year-old male, classically educated at Oxford and employed by the British Museum (Champion 2004). As is well documented, for example by Pope (2011), the gender politics of the time was such that archaeology was 'a predominantly male world and while women may have been tolerated, they were not always welcomed' (Roberts 2002, 49). Some women archaeologists had begun to achieve professional recognition during the 1930s, for example in 1933 Dorothy Garrod became Director of Studies for archaeology and anthropology at the University of Cambridge (Pope 2011, 68). However, Maud Cunnington was still regarded as little more than an amateur, just an antiquary, as

Mortimer Wheeler describes her in his review of one of her books (Roberts 2002, 54; Wheeler 1934, 204). This made it easy for Hawkes to brush aside her valid criticism of his ABC system which then became the dominant theory for decades to come.

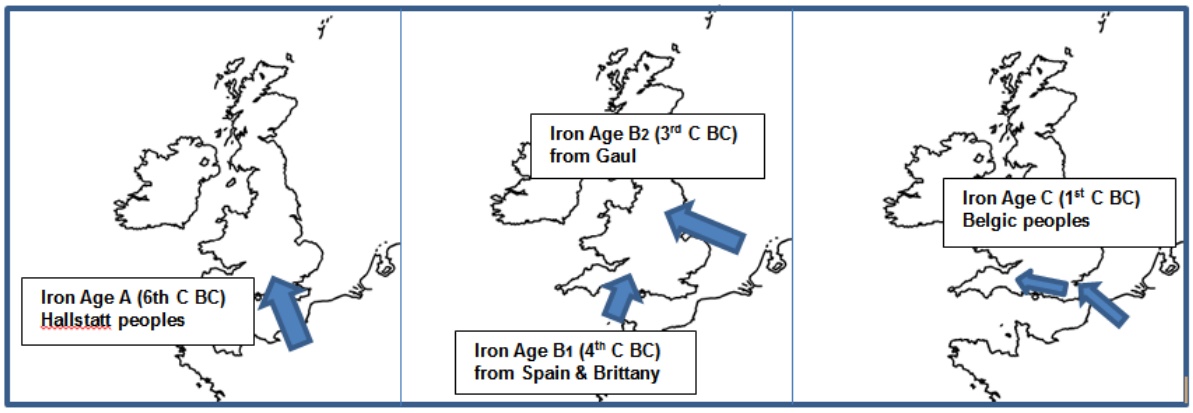
Iron Age A (6th C BC)
Hallstatt peoples
Iron Age B2 (3rd C BC)
from Gaul
Iron Age B1 (4th C BC)
from Spain & Brittany
Iron Age C (1st C BC)
Belgic peoples

Figure 1.5 - The Hawkes ABC system of Iron Age invasions

It is also worth noting at this point that apart from a few notable excavations, such as those already mentioned at Dinorben (between 1912 and 1922) and Traprain Law (between 1915 - 1924), the bulk of the work was being done in southern Britain, as Fig. 1.6 below illustrates. These illustrations come from Hawke's 1931 article *Hill-forts* and shows the distribution of hillforts he considered for his ABC theory, clearly showing the vast majority in southern Britain. This is the second element of bias in British hillfort studies; that of the pre-eminence of central southern England in the excavation and publication record of hillforts, and thus the domination of this area in the interpretation and understanding of hillforts throughout the twentieth century. This thesis will attempt, in part, to try and rebalance this bias by concentrating on the Atlantic west of Britain.

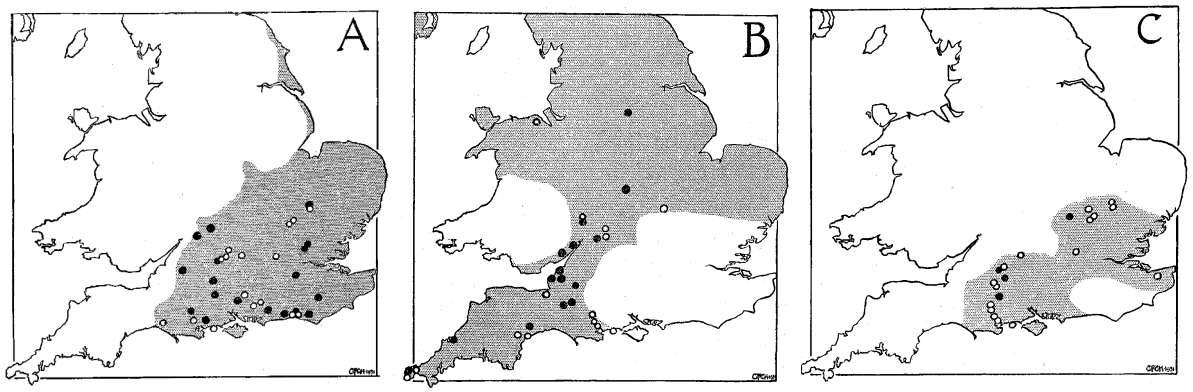

Figure 1.6 - Distribution of hillforts considered for Hawkes ABC system (reproduced from Hawkes 1931, 63, 78, 91)

This ABC system worked well for hillfort studies and was to remain the main theory for the next thirty years (Cunliffe 2003, 14). It complemented the social context of the time, which as the 1930s went on was becoming both more militaristic, and more fearful of powerful nations overseas. Hillforts were seen in this country to be akin to Roman camps or Norman castles (Collis 2010, 30), and the view that these hillforts had been the last outposts of native resistance against aggressive foreign invaders, appealed to both the public and archaeologists alike. It also seemed to validate the classical sources. The most

commonly quoted Roman literary source for the Roman subjugation of Britain is Suetonius, who said that Vespasian had fought thirty engagements, subdued twenty native centres and received the surrender of two warlike 'tribes' (Mattingly 2007, 98; Suetonius 2007). The normal interpretation of Vespasian's twenty native centres is that of the traditional Iron Age strongholds or hillforts. For many in the early twentieth century, the validation of these classical writers was the main aim for excavating hillforts, as it also was in France and Germany, and drove many archaeologists to excavate the largest, most impressive hillforts.

As part of this trend Mortimer Wheeler and Molly Cotton started excavating Maiden Castle in 1934: an excavation, which lasted almost until the outbreak of the Second World War and fired the public imagination (Fig. 1.7). Wheeler wrote dramatically of barrages of ballista, the burning of huts and the massacre of the defenders (Wheeler 1943, 62). He based this interpretation on the discovery of a number of Roman type ballista arrowheads at the eastern end of the hillfort, a thick layer of ash close to the eastern entrance with Late Pre-Roman Iron Age pottery and a few scraps of pre-Flavian Samian ware, and most famously from his 'war cemetery'. This was a series of graves with 38 skeletons, apparently hastily buried, some with traumatic injuries, the most famous with an arrowhead in his vertebra shown in Fig. 1.8 (*ibid*. 63). The image of the war cemetery, its occupants the last valiant defenders against the Roman invasion, hit a chord with a population itself facing the threat of another invasion from Europe. Wheeler's interpretation of what happened at Maiden Castle seemed to echo what Suetonius had written. His dramatic writing led to a wholesale acceptance of his explanation of what happened at Maiden Castle by both archaeologists and the public alike. This view has been challenged; when Sharples reinvestigated the site in the 1980s, he questioned Wheeler's view and disputed most of Wheeler's evidence, finding alternative explanations for most of Wheeler's interpretation (Sharples 1991, 125). However, the Maiden Castle excavation remained extremely important for the study of British hillforts. Whilst it brought hillforts to national attention, the concentration on solely the Late Pre-Roman Iron Age was also a retrograde step, helping to put back the tentative steps taken towards an understanding of the possibility of older origins that had occurred during the 1930s.

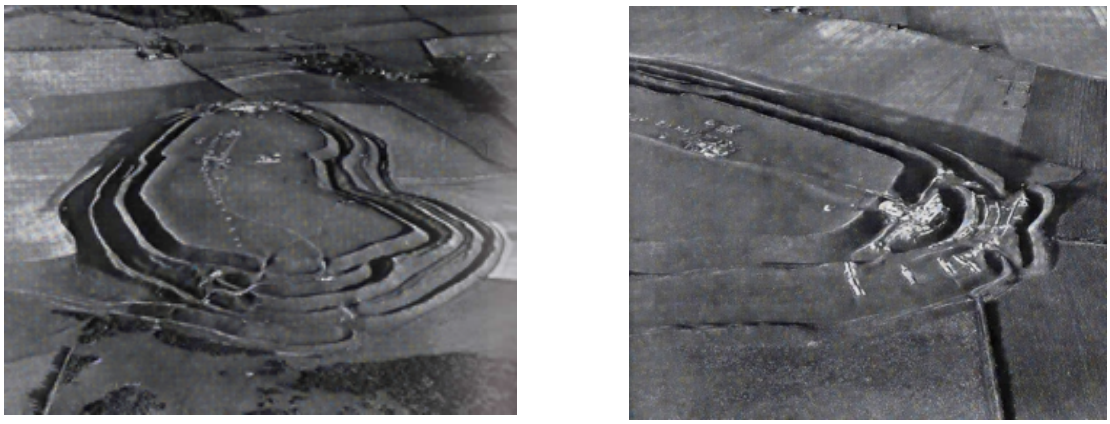

Figure 1.7 – Maiden Castle – taken during the 1937 excavation (Wheeler 1943, Plates LXXIV, XCHI).

Figure 1.8 – Roman ballista bolt in the spine of skeleton P7a from Maiden Castle 'war cemetery'. (Wheeler 1943, Plate LVIIIa)

1.5 1940s-1950s: The beginnings of chronology

The 1930s had been a particularly exciting time for hillfort archaeology, but it was the 1940s that saw a real attempt to understand Iron Age society better, both in terms of settlement and chronology. Starting in the late 1930s with Gerhard Bersu's excavation of Little Woodbury settlement, excavations were undertaken to 'uncover systematically a complete settlement and to discover as much as possible about it as a social and economic organism' (Bersu 1940, 30). At the time when ramparts were still the main preoccupation for hillfort archaeology, settlement archaeologists were methodically working to understand how non-hillfort settlements functioned as a complete entity.

At the same time, a start was being made to really put together a chronology for hillfort development. Peggy Piggott advanced the idea of the development of hillforts from early palisades, through univallate to multivallate forts, generally known as the Hownam Sequence after her excavation at Hownam Rings in the northern Cheviots in 1948 (Fig. 1.9). Although she believed it was 'most probably the local descendants of the Late Bronze Age people who built these strongholds', she thought that the earliest palisade phase did not begin until the second or first century BC (Piggott 1948, 220). She was still discussing each phase in terms of Iron Age A, B or C, showing that this invasionist view of hillfort development was a pervasive one. Her view was that the most developed phase of the Hownam Sequence may have been a result of the:

> 'Inter-tribal warfare following the Roman invasion in southern Britain. Aristocratic leaders and their families were driven from their own lands and fled to found new kingdoms with their kinsmen elsewhere. So, is it not probable that these multiple ditches mark the arrival of such political refugees from the south?'
>
> (Piggott 1948, 222)

Her article illustrates the difficulty archaeologists had in dovetailing possible native development of hillforts that the excavations seem to be suggesting with the popular invasionist theories of the day. She acknowledges that the early hillfort development may be native, but insists that the later, more

spectacular phase must have been brought in from southern England, thus denying the possibility of a straight line, indigenous development from early native hillforts to later, monumental ones. In 1948, Christopher and Jacquetta Hawkes wrote that the hillforts of southern Scotland, whilst having a 'native' beginning of farmers building simple defences of wooden palisades on hilltops for defence, it was not until the third century BC and the La Tène invasion that we see what we recognise as developed Scottish hillforts, especially 'vitrified' forts being built as a result (Hawkes & Hawkes 1948, 108). This view of developed hillforts in Scotland being the result of influences from the south was a strong one. It was still in circulation 20 years later when the hillforts of Lowland Scotland were described as being built by refugees from the Belgae in the south and it was either these refugees or the threat of these refugees that led to the creation of the most sophisticated hillforts there (Scott 1966, 59). This proves just how deeply the invasionist theory, pioneered by Hawkes in the 1930s, had penetrated within British hillfort studies.

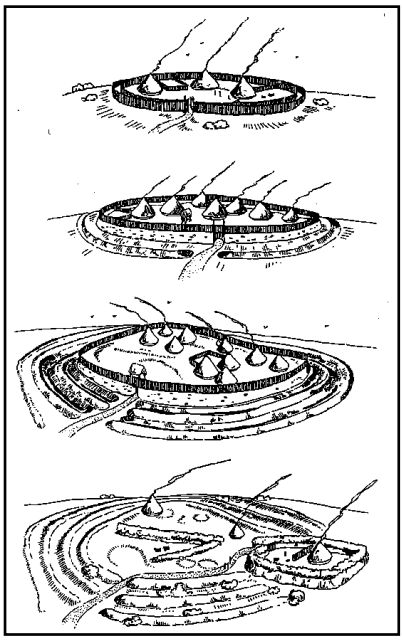

Figure 1.9 - The Hownam model: a simplified version of the sequence (Armit and McKenzie 2013, 12).

Molly Cotton published a comprehensive article looking at British hillforts with timber laced ramparts in 1954, categorising them on a regional basis, and looking at the existing evidence for their construction and dating. She started the article with the perceptive comment that just because a structure has an earth and stone bank with timber lacing, it doesn't mean it can be automatically assigned to a particular date or culture, stating that such structures had been dated from the Middle Neolithic to the Dark Ages in different parts of the world (Cotton 1954, 26). However, in her examination of the hillforts, which she was still looking at in terms of Iron Age A, B or C, most were given dates no earlier than 200 BC. Where they did seem to have an early date, for example at Almondbury (Gloucestershire) and Eddisbury (Cheshire), they were described as being Early Iron Age (Cotton 1954, 86, 89). This shortened chronology dictated by the invasionist theory was creating huge issues within the field as a much longer one was now being suggested by excavation. Archaeologists such as Cotton were struggling to reconcile the evidence that excavations were producing with an absolute belief in invasionism. This reliance on an historical narrative by the majority of archaeologists could be argued to have actively

hindered the development of hillfort studies, as it effectively stifled creative debate about the possible origins of these monuments.

1.6 1960s: The dismissal of invasionism and Bronze Age beginnings

It was not until the 1960s that hillfort studies made any significant shift of direction. By this time, it had become obvious to many that the Hawkes ABC system did not work. One of his main critics, Roy Hodson, effectively took apart the Hawkes system with a series of criticisms (Hodson 1962, 1964). Hodson relied heavily on evidence from hillfort excavations to illustrate his theories, bringing hillforts directly into the heart of the argument about the nature of Iron Age society. It was the increasingly vocal critics of the Hawkes ABC system, such as Hodson, along with a combination of the increased use of radiocarbon dating and a realisation that the invasion theory was too simplistic to explain the emerging chronologies of more complex hillfort development, which led to its abandonment. The great age of some hillforts, with origins much earlier than originally anticipated, meant that to many the Hawkes system just could not be correct. In 1965, Stuart Piggott, whilst acknowledging that there are similarities in hillfort designs right across Europe that in part had fuelled the invasionism model, pointed out that it was the differences in Britain that made it unique. For example, in Europe the dominant house design had always been rectangular whilst in Britain it was circular. Piggott saw a prehistoric Europe of influences; where different peoples in different locations influenced others with ideas rather than wholesale movement;

> 'The timber-framed wall or rampart could of course be an indigenous invention within barbarian Europe, but it must also be remembered that such walls, for defence or in peace-time building, have a very long history in the Near East and the Aegean…… It does seem possible that, following the events of the thirteenth and twelfth century BC, mercenaries and adventurers returning to continental Europe remembered the strength of the timbered walls they had themselves attacked, and introduced them into their own lands.' (Piggott 1965, 204)

This was the start of a move away from a reliance on history and seeing invasion as the main means of cultural exchanges. In 1966, Graham Clark effectively took apart the invasionist model in an article in Antiquity. These combined attacks had a profound effect on British archaeology; in 1968 Harding wrote that by the early and middle 1960s, the invasionist theory was 'decidedly démodé', and 'how change was generated remains fundamental to our interpretation of the period. Should we regard novel types as the result of *imposition* by colonists from mainland Europe, as the product of commercial *diffusion*, or as evidence for a process of spontaneous insular *innovation*?' (Harding 1974, xvii). Even Christopher Hawkes himself was questioning whether it was invasion that had resulted in similarities of artefacts being seen either side of the Channel in the Late Pre-Roman Iron Age, or whether it could have been something else (Hawkes 1968, 14). He went on to say that weapons and brooches could have been made by native smiths emulating continental models, as could British potters be copying Gaulish pots; the heart of Cunnington's original objections to his theory. This was a tremendous volte face for the greatest proponent of invasionism in the twentieth century and sounded the death knell for a theory that had held sway for over 40 years.

This dismissal of invasionism also corresponded with a theoretical shift within archaeology as a whole, with the rise of 'Processual' or 'New' Archaeology. This theoretical approach dismissed the Culture-Historical method as one concerned merely with data collection. In 1968, Binford wrote scathingly that whilst archaeologists could create inventories of artefacts, place them in chronological relationships to each other and devise classifications of assemblages, they did not:

> 'Help to achieve the stated aim of archaeology. An accurate and meaningful history is more than a generalized narrative of the changes in composition of the archaeological record through time……What we seek is to investigate is cultural process, and only with an understanding of such processes can we reconstruct the events which form the context in which the archaeological record was produced.'
>
> (Binford 1968, 11-12)

This general theoretical change led to a change of direction within hillfort studies. Previously, the main areas of hillforts excavated had been the ramparts and gateways so the sequence of construction could be established and evidence for waves of invasion found. With the focus shifting towards 'cultural evolutionism', there was a move towards excavating hillfort interiors to find out more about the social and economic roles of hillforts (Collis 2010, 31). This change in hillfort archaeology was also partly influenced by work previously done on Iron Age settlements by archaeologists such as Bersu at Little Woodbury in the late 1930s and 1940 (Bersu 1940). By learning more about patterns of development and how the occupants of hillforts actually lived, it was hoped that a more comprehensive understanding of the origins and complicated history of hillforts could be built up.

Therefore, once the popularity of Culture-Historical theory gave way to Processual theory, the emphasis shifted from ramparts to interiors. The influence of the Little Woodbury excavation cannot be underestimated, as it quickly became an 'idealized settlement module (roundhouse + 4 post granaries + storage pits)' (Evans 1989, 445). This desire to understand settlement archaeology in a hillfort setting can be demonstrated when we look at the differences between the positions of trenches being excavated in the 1930s and those of the 1960s/70s. This can be clearly illustrated when we compare the positions of Varley's trenches in his excavation of Old Oswestry between 1939-1940 with those of Alcock's excavation of South Cadbury hillfort between 1966 - 1970 (Fig. 1.10). The contrast could not be starker. Only four of the Cadbury trenches were opened on the ramparts, the other twelve being in the interior of the hillfort. The differences in theoretical approaches made a direct and very real difference to the excavation strategies adopted by the archaeologists in the 1960s and beyond. Alcock himself taught many of the next generation of archaeologists, such as Musson and Guilbert, who went on to become leading advocates of this approach (R. Pope pers. comm. 2020). This in turn has affected how we now understand hillforts and their origins, with a more comprehensive overview of the hillforts in the round, how they were built and how they were lived in, not just a picture of successive ramparts.

Fig 1.10 - Positions of trenches during Varley's 1939/40 excavation of Old Oswestry (Source: Rothwell 2014) and the excavated area of the 1966-1970 South Cadbury hillfort excavation (© South Cadbury Environs Project).

Theories about the possibility of Late Bronze Age origins for certain areas of the country gained traction from the late 1960s onwards, although, as already shown, the possibility of a much earlier origin had been postulated since the mid-19th century. In 1958, Aileen Fox, although still using the invasionist language prevalent at the time, discussed hillfort types in southwest England. She noted that forts on either side of the Exe were of different types, and that:

> 'These fort patterns transcend tribal boundaries established by the Roman Conquest, indicating that the spread goes back to a time before regional power or political consciousness developed among the Dumnonii and Silures. This accords with the archaeological evidence for an early origin'. (Fox 1958, 51)

Bill Varley, writing in 1964 believed that some of the hillforts in Cheshire could also have had an early beginning. He noted that whilst hilltops had probably been enclosed by palisades as far back as the idea of having property to enclose, 'one no longer need to be shy about claiming an early date for our early forms (of hillfort)' (Varley 1964, 85; 86). In 1968, Jobey questioned whether some palisaded enclosures in Northumberland and southern Scotland could be Late Bronze Age, but he could not come to a firm conclusion due to the plateau of the calibration curve which meant firm Late Bronze Age dates were difficult to accurately obtain. He later looked at the Late Bronze Age assemblage of tools at Traprain Law, which seemed to him to again suggest Late Bronze Age occupation at this site (ScARF 2012; Jobey 1968; Jobey 1976). However, although time frames were starting to be pushed back from the fourth century BC, for the vast majority of archaeologist's hillforts remained a purely Iron Age phenomenon.

Despite the large-scale digs of the first few decades of the twentieth century, actually very few hillforts had been investigated. The 1960s saw large scale, planned excavations at a number of sites: South Cadbury in Somerset (Alcock 1968a, 1968b, 1969, 1970, 1972, 1980; Barrett *et al*. 2000), Crickley Hill

in Gloucestershire (Dixon 1976, 1994; Savage 1988), Croft Ambrey, Credenhill, and Midsummer Hill in the Welsh Marches (Stanford 1967,1974; Stanford 1971; Stanford 1981), Dinorben in North Wales (Savory 1971a, 1971b, 1976a, 1980a) and Danebury and Winklebury in Hampshire (Smith 1977; 1979; Cunliffe 1984, 1995; Cunliffe and Poole 1991; Payne *et al*. 2006, 12). This increase in knowledge from excavation played a significant part in ending a theory seemingly based on trying to prove classical sources correct. However, even though there was an increase in the number of hillfort excavations, most of them were of a similar typology: multivallate hillforts, many of them in downland locations. So, although the increasing knowledge from these excavations helped move the discipline on, there was little in the way of typological development at this time with hillforts still being seen as a homogeneous type of monument.

At the end of this decade excavations began at Danebury under the aegis of Barry Cunliffe (Cunliffe 1984). He wrote that in the early 1960s, young archaeologists were keen to start investigating the 'new archaeology' that had replaced the old-fashioned Hawkes style invasionism. Despite a number of large-scale digs, 'ten years later most archaeologists had realised that, while the theoretical approaches still held their excitement, the scraps of evidence they were forced to use, amassed haphazardly over a century or so, were just not good enough to support or test the theories' (Cunliffe 2003, 21). This realisation led to Danebury being excavated from 1969 until 1988, and it is one of the most extensively studied hillforts in Europe, with 57% of its 5ha interior having been excavated (Cunliffe 2003, 28). Much of the theories of hillfort development of the next few decades came from the extensive evidence discovered during this seminal excavation.

1.7 1970s: Classification and Index

The study of hillforts and their origins had made great strides forwards during the 1960s, and the theoretical changes wrought during that decade were still being felt during the next. The 1970s saw a phase of hillfort archaeology where the need to list, classify and index hillforts as a category of ancient monument was strong. The first of these was Alexander Hogg, who published *Hillforts of Britain* in 1975. In this, he tried to understand hillforts in terms of the elements of their structure, whilst also putting them in their social and historical setting. Secondly, he constructed what he called a gazetteer, where he detailed a representative selection of hillforts taken from different regions of Britain, giving some basic information about them, many with an illustration (Hogg 1975). Later in the decade, he supplemented this with a full index of every known hillfort, based on certain criteria which can be summed up as 'an enclosure with substantial defences, usually on high ground and probably built between about 1000 BC and AD 700, but showing no significant Roman influence', (Hogg 1979, 1). This index numbered well over 1000 and was published on behalf of the Hill-Fort Study Group. Another important contribution during the 1970s came from Forde-Johnson, who published a survey based on regional groupings that looked at elements such as the siting of forts, internal features and their defences (Forde-Johnson 1976). Whilst he generally described hillforts as being of Iron Age date, during a discussion about the circular shape of the huts within British hillforts contrasting with rectangular Continental huts, he did acknowledge that they had possibly developed out of an earlier Bronze Age tradition by observing that:

> ‘The circular form is in marked contrast to the Continental tradition of rectangular huts, and makes it difficult to suggest that they, like the enclosures within which they stand, are derived from the mainland of Europe. It seems much more likely that they represent a continuation of the native Bronze Age tradition, in which case it would appear that however large the migration which ushered in the Iron Age, it did not involve a complete replacement of the existing population’.
>
> (Forde-Johnson 1976, 283)

Discussion about whether the origins of hillforts could be traced back to the Late Bronze Age moved on apace in the 1970s. In 1971 Savory was a vocal proponent of early origins and wrote that ‘so well established has become the view that hillforts in Britain are a pre-eminently Early Iron Age phenomenon that many prehistorians working today would need to be reminded how firmly their predecessors of two generations ago believed in the Bronze Age date of most of them’ (Savory 1971a, 251), tracing this change back to Hawkes and the introduction of invasionism. He suggested a Late Bronze Age date for Dinorben in Denbighshire (Savory 1971b) and in 1974 Dennis Harding discussed whether or not a Late Bronze Age winged axe found at Ivinghoe Beacon could be an LBA throwback that just happened to be in the same place as a later hillfort:

> ‘The alternative would be to grasp the nettle firmly and declare them contemporary with the occupation of the hillfort itself, with the pottery that occupation produced. The concept of Late Bronze Age hillforts in Britain, in fact, would no longer be regarded as excessively controversial; though formerly they were seen as a phenomenon of the Iron Age exclusively, there is now sufficient evidence for hillforts on the Continent extending back into the Urnfield period to render their absence in Britain in the later Bronze Age increasingly implausible’.
>
> (Harding 1974, 132)

The Breiddin hillfort in the Welsh Marches near Welshpool was extensively excavated between 1969 - 1976 by Christopher Musson. This is an imposing hillfort, and the excavation showed large-scale occupation of the site in the Late Bronze Age, which included ramparts, occupation evidence and large-scale craft working. This was one of the first hillfort excavations that conclusively revealed evidence for a substantial, functioning hillfort on the site dated firmly to the Late Bronze Age (Musson 1991). Excavation of Moel y Gaer, Rhosesmor hillfort in the early 1970s also suggested a Late Bronze Age early phase of occupation (Guilbert 1973, 1975). Both Musson and Guilbert had learnt their trade from Leslie Alcock who had understood the importance of studying the settlement evidence within hillforts. Taken together, these excavations advanced the idea of a Late Bronze Age origin for hillforts immensely through actual excavated and securely dated evidence; a significant step up from the musings of previous generations of archaeologists.

1.8 1980s – 1990s: Theories of society

Once the Danebury hillfort excavation itself had finished, the project moved on to looking at the local area, and the Danebury Environs Project was established. Between 1989 and 1996, a team excavated

locations close to the hillfort to try and understand its place within the landscape in which it stood. Using the Danebury Environs to test theories he had first developed in 1974, Cunliffe developed a theory of Iron Age society, in particular the role of the hillfort within that society which held sway for nearly 20 years. He believed that the myths and stories of late Iron Age Ireland (mid-first century AD), could be used to reflect the society of pre-Roman Iron Age Britain, as Ireland itself had been untouched by Rome. Using this literary evidence, as well as the huge amount of data excavated from Danebury, Cunliffe constructed a 'central place' theory to explain the place the hillfort had in Iron Age 'Celtic' society (Fig. 1.11). He believed that the hillfort was the residence for the king and the elite and was supported by a network of farmers in the surrounding area supplying it with food. As can be seen, both models envisage the hillfort as the residence of a 'king' and of Iron Age society being one of rigid social divisions. The hillfort was used to dominate an area and act as a focus for exchange and ritual, all tightly controlled by the elite with the field systems he discovered around Danebury supporting this (Cunliffe 2003, 160).

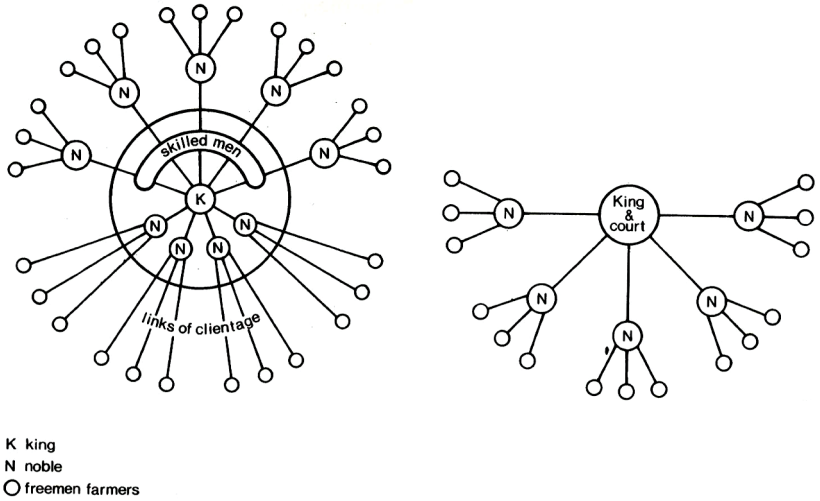

Figure 1.11- Cunliffe's interpretation of the structure of Iron Age society. (Cunliffe 2003, 167).

Barry Cunliffe's vision of the Iron Age held sway throughout British Iron Age archaeology from the late 1960s to the late 1980s. It was with the publication in 1989 of J. D. Hill's article *Re-thinking the Iron Age* that his views began to be seriously questioned. In his article, Hill cast doubt on the view of the British Iron Age as a cosy, well known, well understood place. He argued that it should not be seen as such, and that archaeologists should be critical of the silent preconceptions of a 'Celtic' society that had been inherited from previous generations of archaeologists. Hill's article was explosive as he had effectively taken apart Cunliffe's theories of the British Iron Age, and the role hillforts played within this society which had dominated for 20 years. This re-examination of hillfort theory also came at a time of developing archaeological theory, from 'processual' to 'post-processual' (Hodder 1991). Where the processual archaeologist had looked to understand the cultural and environmental processes that would underpin a society, post-processual archaeologists were more interested in looking beyond this, that it was 'a rediscovery of the concept of culture as a source of cross-culturally idiosyncratic variations in human belief and behaviour' (Trigger 2006, 444). Its early proponent was Ian Hodder, stemming from his ethnoarchaeological work (Hodder 1991). Therefore, Hill's re-evaluation of Cunliffe's theory of hillfort development was very much part of the post-processual movement as he was looking at how people

might have felt about, moved in and used hillforts, rather than a strict definition of the place they had in Celtic societies.

The discussion of Late Bronze Age origins for some hillforts continued during this period. In 1980, Burgess saw hillfort building in Wales beginning during the Penard Period (*c*. 1050-850 BC), citing Dinorben, Ffridd Faldwyn and The Breiddin as his main examples (Burgess 1980, 270). This Penard Period dating was echoed in 1994 with the date of the construction of the first phase of hillfort building at Rams Hill (Harding 2012, 155; Needham and Ambers 1994, 235). Yet at this time, there were also dissenting voices: 'the very early dates, back into the Bronze Age, will not stand up to close scrutiny' (Avery 1993a, 106). He believed that only a very few hillforts could be shown to have begun before the very end of the Bronze Age and earliest Iron Age. Excavations at this time were showing Late Bronze Age dates for the earliest development of hillfort sites, for example Balksbury Camp (Hampshire) (Wainwright and Davies 1995, 53), The Breiddin (Powys) (Musson 1991), and Beeston Castle (Cheshire) (Ellis 1993). In 1990, Cunliffe refined his theories still further. He looked at the time before he believed the majority of hillforts were built, the Late Bronze Age, and examined why some hilltops were becoming enclosed at this time. He believed that at the end of the second millennium BC, a large programme of land division had taken place, with linear ditches being built, some of tremendous length. He believed that these linear ditches were a result of a considerable community effort that must have involved some kind of a coercive authority and had influenced the building of the earliest hillforts (Cunliffe 1990, 334). However, despite Cunliffe looking 'before hillforts', Hill was still placing hillforts firmly within the Iron Age, with no mention of the theories of Late Bronze Age origins that had begun to circulate in the 1960s with Varley and Jobey. His 1989 paper had concentrated on the Early and Middle Iron Age of southern England, only saying hillforts marked the end of a long tradition of enclosure. It seems apparent that Hill was more interested in looking at the theories of why hillforts were created and used than by the nitty-gritty of establishing chronologies for these monuments. Therefore, during the late 1980s and 1990s, whilst work was being done on establishing a firm chronology for the earliest hillforts, the main discussions continued to be centred on their function rather than their date.

1.9 2000s: Re-evaluation and regional development

The 2000s, however, saw chronological questions being revaluated, with Late Bronze Age origins being placed firmly at the fore. An important article by Hamilton and Manley in 2001, looking at hillforts mainly in southeast England, postulated three distinct phases of hillfort construction, each with different cultural motivators: 1. Late Bronze Age hillforts as landscape coordinators, 2. Middle Iron Age hillforts as symbolic centres, 3. Late Iron Age hillforts as places of empowerment (Hamilton and Manley 2001, 31-33). This was an interesting approach, encompassing as it did elements of both Hill's vision of hillforts as places for society to come together, as well as Cunliffe's view of hillforts as evidence of elites within Iron Age society. This was a real attempt to acknowledge that the reasons for building hillforts may have changed within the millennia in which they were being constructed and utilised, and that they cannot be viewed as a homogeneous type of monument. They believed that there were distinct hillfort using societies that had different and long-lasting traditions of hillfort building based on time, place and regionality (Hamilton and Manley 2001, 34). This was one of the first real attempts in recent years to develop a new chronology and typology within hillfort studies, looking at both when and why they were

built and used that put the start of hillfort development firmly in the Late Bronze Age. Brück (2007) also placed hillforts as occurring in the Late Bronze Age, examining 17 such monuments when looking at the nature of Late Bronze Age settlement in southern Britain (Brück 2007, 25). She saw them as foci for their communities, a 'monumental expression of attachment to place' (Brück 2007, 30). Driver (2013, 31-33) prefaced his work on Iron Age hillforts in Ceredigion with a detailed account of the increasingly numerous examples of hillforts within this area that began in the Late Bronze Age, e.g. Bryn Maen Caerau (Williams 2001); Caer Cadwgan (Austin *et al* 1984-6; Austin *et al.* 1987) and Berry Hill (Murphy and Mytum 2012). Brown's 2009 book *Beacons in the Landscape* included a substantial discussion about Late Bronze Age hillforts. Therefore, by the 2000s describing hillforts as having a Late Bronze Age origin was unremarkable, indeed mainstream. This is in marked contrast to Harding's statement that the concept of Late Bronze Age hillforts in Britain was 'excessively controversial' (Harding 1974, 132).

As this account has shown, the focus for much of the twentieth century has been on the rich archaeological landscape of central southern England. Important excavations have taken place in other areas such as the Welsh Marches and Scottish Borders as far back as Willoughby Gardner at Dinorben in the first decade of the twentieth century. Many of these have resulted in important developments, such as Piggott's Hownam Sequence and Jobey's early ideas about the origins of hillforts during the Late Bronze Age in the Cheviots. However, the main theories of hillfort development were driven by work done on sites in southern England. The importance of studying hillforts outside of this core area is becoming more critical in trying to understand this phenomenon on a national scale, especially as we are now beginning to see a broader picture of the early development of hillforts on both a regional and a national level. It is not surprising that a number of regional hillfort studies have taken place throughout the first decade of the twenty first century. Studies such as the Northumberland *Discovering our Hillfort Heritage* (1998-2003), Clwyd's *Heather and Hillforts* (2008-2012), the *Traprain Law Environs Project* (2000-2004) in East Lothian and Cheshire's *Habitats and Hillforts Project* (2008-2012) have all aimed to take our knowledge of these important structures, outside the core area of southern England, forward. Their aims are remarkably similar: to increase understanding of these monuments for conservation and interpretation, especially for the general public. The AHRC funded *Atlas of Hillforts* project, which collated topographical and chronological details of all hillforts in Britain and Ireland into one, freely available database, has taken hillfort studies even further. This database enables anyone to search the nationally collated list of hillforts using numerous criteria; location, dating evidence, record type, status, landscape, interior, entrances and enclosing work (www.hillforts.arch.ox.ac.uk). Therefore, the amount of information available for those wishing to study hillforts has vastly increased during the last decade, enabling a deeper understanding of these important monuments.

1.10 Recent work in Ireland

Whilst this thesis is concerned primarily with Late Bronze Age hilltop sites in the Atlantic west of Britain, one important area of comparison is that of Ireland. Geographically close, being in the same Atlantic zone (Fig. 1.12 below), and with a significant hillfort tradition, Ireland will form an important comparator for my study area that will be investigated further during the course of this thesis. This section will be a

short précis of the current state of understanding of what was happening during the Late Bronze Age of our near neighbour.

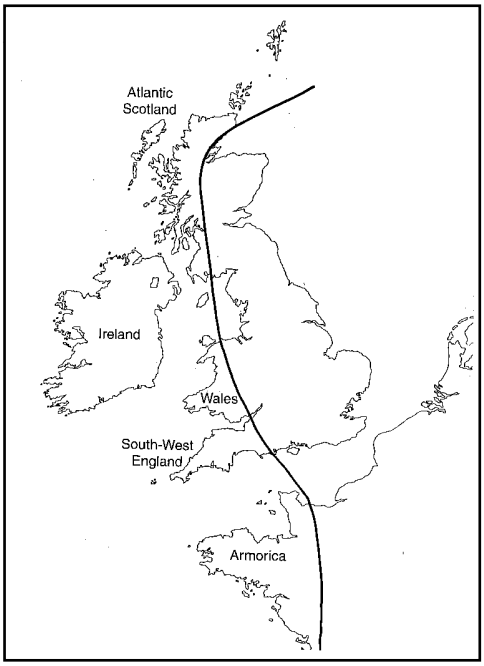

Figure 1.12 - The north western Atlantic zone. (Henderson 2007, 4).

The same terminology is used slightly differently in Ireland than Britain. The Irish usage of the term hillfort refers only to monuments on or near hilltops, cliff edges and spurs, generally over 1ha, with approximately 108 such sites recorded (O'Brien and O'Driscoll 2017, 22). These hillfort sites were subdivided by Raftery (1972) into Class 1 – Univallate hillforts, Class 2 – Multivallate hillforts and Class 3 – Inland promontory forts (excluding coastal promontory forts). Anything smaller than 1ha is termed a 'hilltop enclosure', with approximately 73 prehistoric ones recorded (O'Brien and O'Driscoll 2017, 22). What complicates this is the phenomenon of 'ringforts'. This type accounts for over 47,000 surviving sites, with many more believed destroyed. However, recent developer-led work has confirmed that these site types date exclusively to the Early Medieval period (Clarke 2002; Clarke and Carlin 2008; Kinsella 2008). There are 274 reported coastal promontory forts in Ireland, of which a significant proportion will date from the medieval period. However, as very few have been excavated, this is difficult to confirm, and at least one, Dunbeg (Co Kerry) has yielded a Late Bronze Age date when excavated (O'Brien and O'Driscoll 2017, 22). The last type of site that could be argued to be hillforts are the large 'royal' enclosures such as Rath na Rioga, Tara (Co Meath), Dún Ailinne (Co Kildare), Rathcrogan (Co Roscommon) and Navan Fort (Co Armagh). Of these, three have been securely dated to the Iron Age; Dún Ailinne (Johnson and Wailes 2007), Tara (Roche 1999) and Navan Fort (Mallory 2000). Therefore, whilst there are differences between the description and classification of hillforts between Britain and Ireland, there is enough similarity for comparison to be a worthwhile exercise. More important however, is establishing the chronology of Irish hillforts as this could illuminate what was happening in the Atlantic west of Britain at this time.

The question of hillfort chronology in Ireland has greatly benefitted from a project commenced in 2011, financed by the Irish Research Council, entitled *Hillforts, Warfare and Society in Bronze Age Ireland* (O'Brien and O'Driscoll 2017, 8). Led by Prof William O'Brien from University College, Cork, this project

has significantly increased the understanding of the development of Irish hillforts, which prior to this was complicated by the fact that, as already described, there are several types of hilltop enclosures, many of which show evidence for multi period extended occupation. The earliest hilltop enclosures date from the Neolithic – early/middle 4th millennium BC, for example Lyles Hill (Co Antrim) (Evans 1953; O'Brien 2016; Simpson and Gibson 1989) and Donegore (Co Antrim) (Mallory *et al*. 2011; O'Brien 2016). There is no evidence for these monuments being continuously occupied from the Neolithic to the Bronze Age, however there are examples of Bronze Age hillforts being built on hills already occupied by older monuments, for example Rathcoran (Co Wicklow), Knocknashee (Co Sligo) and Freestone Hill (Co Kilkenny) (O'Brien 2016, 222). Examples of such landscape genealogies are also found on sites within my study area and are more fully examined in Chapter Four. Hillfort building in Ireland emerged during the Middle Bronze Age (1400 – 1100 BC), accelerating during the Late Bronze Age (1100 – 700 BC), with palisades, ditches and stone walls (O'Brien 2016, 222). The project examined eight hillforts, using Bayesian analysis of radiocarbon dates where possible, to investigate the construction dates for these sites. The main findings of the project for Class 2 (multivallate) hillforts are as follow:

Name	Location	Period	Construction Dates
Hughstown	Co Kildare	Early Neolithic	3694-3533 *cal* BC
Rathnagree	Co Wicklow	Middle Bronze Age	1417-1135 *cal* BC
Ballylin	Co Limerick	Late Bronze Age	1258-1059 *cal* BC
Clashanimud	Co Cork	Late Bronze Age	1240-1080 *cal* BC
Glanbane	Co Kerry	Late Bronze Age	1118-927 *cal* BC
Formoyle	Co Clare	Late Bronze Age	1108-917 *cal* BC
Tinoran	Co Wicklow	Late Bronze Age	1155 – 980 *cal* BC
Toor More	Co Kilkenny	Late Bronze Age	1270-1050 *cal* BC

Table 1.1 - Probable construction dates for Class 2 hillforts examined by the *Hillforts, Warfare and Society in Bronze Age Ireland Project*. (O'Brien and O'Driscoll 2017).

There is much evidence for a Late Bronze Age apogee of hillfort building outside of this project. Rathgall (Co Wicklow) is a 7.3 ha site with four concentric rings. The inner most ring is almost certainly Early Medieval (Becker 2010), however evidence from the rest of the structure shows it to be a high status Late Bronze Age hillfort site with metalworking and a funerary complex. Radiocarbon dates lie between *c*. 1200-1000 BC, which matches the Roscommon phase metalwork recovered (Raftery 1972; 1976; O'Brien 2016. 222). Haughy's Fort (Co Armagh) has three concentric bank and ditch enclosures, with radiocarbon dates showing a long period of settlement from *c.* 1300-900 BC. There is, however, also evidence of a pre-hillfort occupation phase as well as Iron Age occupation (Mallory 1995; Mallory *et al.* 1996; O'Brien 2016, 222). Dún Aonghasa (Inishmore, Aran Islands), is an imposing, cliff top structure with chevaux-de-frise and an enclosed area of 5.7ha. Radiocarbon dates the first settlement to *c*. 1300 *cal* BC, the earliest phase of the hillfort building being *c*. 1100 *cal* BC with evidence for a further phase of occupation *c*. 800 *cal* BC (Cotter 2012; O'Brien 2016, 222). Whilst Class 2 (multivallate) hillforts have traditionally been seen as belonging to the Late Bronze Age, a fact borne out by dating (Table 1.1), other types of hilltop enclosures are also beginning to be seen to have a Late Bronze Age date. Knockhu (Co Antrim) is a Class 3 (inland promontory fort) with evidence for Late Bronze Age construction (McNeary 2014; O'Brien 2016) whilst a number of Class A (univallate) hillforts, normally seen as Iron

Age, have had Late Bronze Age pottery found there; for example, Freestone Hill (Co Kilkenny) (Raftery 1969; Ó Floinn 2000; O'Brien 2016) and Clogher (Co Tyrone) (Warner 2009; O'Brien 2016). However, unlike Class 2 sites, which seem to be a mainly Late Bronze Age phenomenon, these other sites also have significant settlement evidence from the Iron Age through to the Medieval period (O'Brien 2016, 224). There is therefore an increasing amount of evidence for a major hillfort building phase, beginning during the Middle / Late Bronze Age transition, with fully developed, high status sites being created. What is now important to understand is the possible reasons for this intensification of an already existing building tradition.

Questions of the rise in hillfort building in the Bronze Age are intimately entwined with that of Irish identity. Mallory (2013) links this Late Bronze Age hillfort building phase with that of the origin of the Irish language. He views hillfort building as part of the rise of a warrior elite with links to similar traditions in Europe and Britain, bringing a new language (proto-Irish) and sword warfare to Ireland (Mallory 2013). Swords, specifically of a rapier type, were first used during the Middle / Late Bronze Age transitional phase and soon dominated (O'Brien 2016, 241; O' Brien and O'Driscoll 2017, 406; Ramsey 1993). 660 bronze swords have been discovered in Ireland, with a recorded density of 7.6 finds per 1000km^2, one of the highest in Europe (Eogan 1995; O'Brien and O'Driscoll 2017, 406; Mallory 2013). O'Brien and O'Driscoll (2017) see the whole basis for the increase in hillfort building in the Late Bronze Age to stem from warfare and warrior culture; the title of their project - *Hillforts, Warfare and Society in Bronze Age Ireland* illustrates this well. Mallory (2013), O'Brien (2016) and O'Brien and O'Driscoll (2017) all link this Irish phenomenon with an increase in hillfort building during the Late Bronze Age in Britain and the Continent. This thesis seeks to understand the Late Bronze Age hilltop sites and early hillforts of the Atlantic west of Britain to a greater depth than has been attempted before. This knowledge will be central in assessing whether this Irish view of the links between their hillfort building tradition and our own stands up to scrutiny.

This chapter has examined the developments in the study of British hillfort origins throughout the last few centuries. From the earliest antiquarian musings about what they could represent to the latest thinking about their place within ancient society, it has become obvious that hillforts are central to our understanding of the later prehistory of Britain. They have played a pivotal role in developing theories of Bronze and Iron Age society, as well as acting as a mirror for wider cultural concepts prevalent within society at particular times. This work, in looking at Late Bronze Age evidence in two very important areas of Britain: SW England and Wales/Marches, will enable a very real contribution to our understanding of hillforts nationally to be made, and will go some way to re-balancing the geographical bias that has been present within hillfort studies for the last century. The next chapter will place this work within the theoretical and methodological frameworks being utilised by modern researchers in this field, enabling a deeper understanding of the role this research will play within hillfort studies as a whole.

CHAPTER TWO

APPROACHING HILLTOP SITES: THEORY AND METHODOLOGY

Chapter One of this thesis explored the history of hillfort studies, and in particular when the possibility that they might have had Late Bronze Age origins was first identified, along with summarising the latest research into Irish Late Bronze Age hillforts. However, it is also vital to examine the methodological and theoretical developments in the field that has enabled this to occur. Specifically, to investigate the methodologies used by archaeologists studying both settlement and landscape archaeology and how these methods can inform and assist this research. The crux of this thesis is how to use settlement and landscape archaeology to get the social information needed to investigate the nature of the activity taking place on hilltop sites in the Late Bronze Age, along with investigating whether there was a relationship between Irish Later Bronze Age hillforts and western British hilltop sites.

2.1 UNDERSTANDING SETTLEMENT PATTERNS

> 'The British Late Bronze Age sees important changes in the nature and character of the settlement record.'
>
> (Brück 2007, 24)

The state of knowledge of Late Bronze Age settlement patterns in Atlantic western Britain has improved since the 1990s when regional coverage varied greatly (Champion 1999); however, it remains true that southern and eastern Britain have had more extensive investigation and therefore there is a regional imbalance in our understanding of Late Bronze Age settlement (Brück 2007, 24; Jackson 1999). What is known about the Late Bronze Age is that there was an increase in the diversity of settlement types from the preceding Middle Bronze Age (Brück 2007, 25). During this time most settlements had consisted of small clusters of roundhouses with associated domestic and agricultural features (Brück 1999; Ellison 1981; Pope 2015). These continue into the Late Bronze Age, with many other types emerging such as ringworks, hilltop enclosures and early hillforts, midden sites and timber platforms in wetland areas (Brück 2007, 26; McOmish 1996; Needham *et al*. 1996). In a study of Late Bronze Age settlement types, Brück (2007, 26) reported that there were slightly more enclosed sites than unenclosed (58% enclosed to 42% unenclosed). Ringforts are a very diverse group of monuments; structurally, functionally and geographically, appearing over much of Britain, in particular the east (Brück 2007; Burgess 1988; Needham 1991; 1992; Needham and Ambers 1994). Early hilltop palisaded enclosures appear during this period, with sites such as The Breiddin, Powys (Musson 1991), Beeston Castle, Cheshire (Ellis 1993), Norton Fitzwarren, Somerset (Bradley and Ellison 1975; Ellis 1989), Rams Hill, Oxfordshire (Needham and Amber 1994) and Dinorben, Denbighshire (Savory 1971) all being identified as having a pre-rampart palisaded phase, being called early hillforts by many academics (for example Brück 2007; Cunliffe 2000; Hamilton and Manley 2001). Small enclosures appear during the Late Bronze Age in upland areas in SW England (called rounds), SW Wales (called raths) as well as in upland areas of northern Britain. Most of them have less than 1 ha. of enclosed area, often with univallate palisaded enclosures. These have been associated with domestic activity, possibly high

status, with wealth being derived from livestock (Henderson 2007; Jackson 1999, 35; Quinnell 1986, 117; Thomas 1997).

The Late Bronze Age use of hilltop sites seem to have been a new development within the settlement record for this period. One of the main aims of this work is to assess what place the development of these hilltop sites had within these ongoing societal changes. Therefore, it is important to look at methodologies that give social information about how these hilltop sites were being utilised during this period and how they fitted into wider Late Bronze Age society. Brück's (2007) study of settlement character in southern Britain is an excellent example of characterisation of settlement types during this period. She examined the character of Late Bronze Age settlements in southern England, placing early hillfort sites alongside ringworks, timber platforms, midden sites, enclosed and open settlements, studying them in terms of scale, longevity, material culture, hierarchy and craft production. She concluded that the idea of early hillforts being the site of putative tribal centres that developed in the Iron Age into centralised chiefdoms (e.g. Cunliffe 1984) did not necessarily hold true. Her findings showed that the percentage of 'high-status' finds at early hillfort sites were no higher than at ringworks, and indeed not as high as at midden and timber platform sites (Brück 2007, 33; McOmish 1996; Needham 1991, 1992). This approach provides excellent contextual data about everyday life, specifically the role that these early hillforts could have played within society as a whole that will be invaluable for this thesis.

Recent work on establishing chronologies of settlement types, specifically accurately dated roundhouses typologies, adds to this knowledge of how Late Bronze Age settlements were constructed and worked. Pope (2015) has created a dated roundhouse assemblage for Scotland from the Early to Late Bronze Age, which gives 'settlement studies the opportunity to further characterise land use and everyday life through time' (Pope 2015, 180). Her history of Bronze Age architectural traditions, whilst outside this geographical area, gives a useful chronological framework within which to place this research. She observes that whilst lowland sites are the norm, very high-altitude sites are being occupied in the ninth century BC, for example Carn Dubh, Invernesshire, and Eilden Hill North, Scottish Borders, both over 400m altitude, and at highly visible sites such as Traprain Law, East Lothian, and Yeavering Bell, Northumberland. This seems to have been a short-lived phase with the last upland site coming from Balloch Hill H2 *c*. 800BC (Pope 2015, 178-179). Pope's work gives an accurate chronology for roundhouse typology, which will be useful when looking at Late Bronze Age hilltop sites with roundhouses present. Recent work has also focussed on examining the chronology of these Late Bronze Age sites by other academics. Cunliffe (2005, 349) saw large-palisaded enclosures on hilltop locations as a preceding phase to the subsequent development of hillforts. He believed many dated from the eight century BC, with some, for example Moel y Gaer, Rhosesmor, Flintshire, extending the chronology back by a century or two. Harding (2012, 156) reviewed the 'Bronze Age Antecedents' of hillforts, again identifying Late Bronze Age enclosed hilltops, which were often palisaded and preceded developed hillforts. He identified candidates for early hillforts such as Mam Tor, Derbyshire, and The Breiddin, Powys, as dating to the Late Bronze Age. Henderson (2007, 116) identified Late Bronze Age hilltop enclosures in the Atlantic west of Britain, believing they 'likely served as seasonal meeting places

or assembly points perhaps in some way related to the pastoral cycle and the gathering of herds'. Late Bronze Age hillforts in Wales have been examined by both Lynch (2000) and Waddington (2013)

For many of the Late Bronze Age hilltop sites discussed in this thesis the only way to date them is through material culture. It is therefore important to identify how the methodology of creating chronologies through material culture has been constructed. These have generally been created using pottery and metalwork assemblages, frequently named after the find spots of typical hoards, dated using radiocarbon and by comparing them to known continental sequences when they overlap (Burgess 1968; Champion 1999, 96; Henderson 2007; Needham 1996, 2007). Before the 1970s, many academics believed in a seamless transition between the end of the Bronze Age and the earliest phases of the Iron Age, but this has been called into question since the 1980s (Needham 2007, 40). Partly due to more Late Bronze Age settlements being discovered, partly due to an increase in stray finds resulting from the widespread availability of metal detectors and the creation of the Portable Antiquities Scheme in 1997, this led to a re-evaluation of the chronological framework being used for this period (Champion 1999, Needham 2007). Certain key sites, from hillforts to midden sites, which have a good range of material culture assemblages and radiocarbon dates from this period, excavated using modern methods have helped streamline the available chronologies. These include, amongst many others, Brean Down, Somerset (Bell 1990), Norton Fitzwarren, Somerset (Ellis 1989), The Breiddin, Powys (Musson 1991), Balksbury, Hampshire (Wainwright and Davies 1995) and Potterne, Wiltshire (Lawson 2000). The accumulated data from these sites, and many others, have refined the chronology for this period, with Needham's 2007 chronology based on pottery and metalwork (Fig. 2.1) being the basis for much of the subsequent dating of this period.

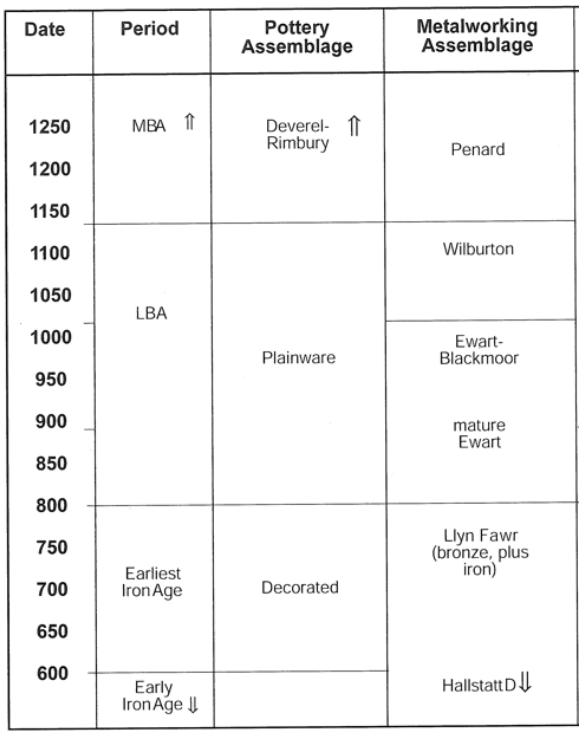

Figure 2.1 – Needham's chronology and terminology for pottery and metalwork during the Late Bronze Age and Early Iron Age. (Needham 2007, 40)

Agriculture and agricultural patterns are important areas of settlement archaeology. Late Bronze Age hilltop sites played an important role within their communities, and it is necessary to assess what part they could have played within the agricultural practices of the day. The *Danebury Environs Project* investigated the distance of sites to a water source, discovering that those that were closer have a higher proportion of cattle bones, suggesting a more pastoral economy based on cattle (Cunliffe 1990). However, work done by Yates (2001; 2007; 2007a) and Hamilton and Manley (1997) on the agricultural intensification that took place within the Late Bronze Age in southern Britain have shown a link between field systems and enclosed sites such as Late Bronze Age hilltop sites, that are important to both arable and pastoral farming practices. Many of the ringwork enclosures occur in areas that see the most intensive enclosure of land (Bradley and Yates 2007, 100). Yates's methodical examination of Late Bronze Age agricultural landscapes and their associated settlements provides an excellent example. He takes individual areas of southern England and records the evidence present. For example, in the area around Dorchester, Dorset, he maps a permanently established farming landscape from the late second millennium / early first millennium BC, with Late Bronze Age field systems recorded next to curvilinear enclosures in the vicinity of Poundbury hillfort (Yates 2007a). The investigation of individual sites such as Field and Needham's (1986) work at Kingston Hill, Surrey, provides evidence for the nature of life on these sites, with ceramics, metalworking and mixed arable farming identified, possibly with associated earthworks in a Late Bronze Age enclosed hilltop settlement. These methodologies enable an examination of the case study areas and sites, directly mapping the agricultural evidence onto Late Bronze Age hilltop sites, informing the assessment of the part the agricultural practices played in the development of these sites.

2.2 INVESTIGATING THE PREHISTORIC LANDSCAPE

> 'Landscape archaeology is an archaeology of how people visualised the world and how they engaged with one another across space, how they chose to manipulate their surroundings or how they were subliminally affected to do things by way of their locational circumstances'.
>
> (Bruno and Thomas 2016, 38)

Landscape archaeology is the study of how ancient peoples used and constructed the landscape around them (Chapman 2006). Whilst a subject that has been studied since the early twentieth century (Childe 1928; Fleure and Whitehouse 1916; Fox 1923, 1947; Sauer 1925), the first time the term was used in print was 1974 (Aston and Rowley 1974). Since then the range of methodological techniques available to examine the landscape has significantly increased, with pertinent ones being examined here, namely landscape settings and landscape genealogies.

2.2.1 The landscape settings of Late Bronze Age hilltop sites

The first thing to consider is where these Late Bronze Age hilltop sites developed; their setting within the landscape and their position amongst the hills. The main methodological development that has contributed to this area has been the introduction of GIS (Geographical Information Systems) from the

late 1970s onwards. GIS is the use of a suite of computer tools for making and analysing spatial information. Although in many ways it was a natural advancement from the topographical analysis pioneered in the 1920s, it has enabled the user to compute a huge number of complex spatial relationships from the information uploaded (Hu 2012, 82). GIS based studies have been used to look at a wide range of complicated subjects which have included prehistoric ritual landscapes (Barrett 1989; Fisher *et al.* 1997; Wheatley 1995) and questions of political landscape and the awareness of being within a territory in Late Bronze Age Wessex (Llobera 1996; van Leusen 1999). Whilst undoubtedly of great utility in all areas of archaeological research, GIS has become a powerful tool within hillfort studies (Allan *et al*. 1990; Chapman 2006, 16). Within GIS hillfort investigation, it has been used to look at intervisibility relationships between hillforts themselves (e.g. James 2007; Lloyd Jones 2017; Matthews 2014; Murray 2018) and to explore questions of the social networks that exist between hillforts (e.g. Driver 2013; Oatley *et al.* 2015).

Classic GIS studies such as Driver's investigation of the architecture of the hillforts of Mid Wales would be difficult to achieve within this study (Driver 2013). Late Bronze Age hilltop sites are often ephemeral, in many cases superseded by later Iron Age hillforts, with their true size and orientation difficult to assess. Studies such as his work well for Iron Age hillforts, but not necessarily for these older hilltop sites. However, certain aspects of Driver's (2013) methodology are clearly useful and will be incorporated into this work - specifically how he has constructed the chronological framework and assessed the settlement patterns to provide a regional context for his study area. Regionality is a theme that reoccurs within this work, and Driver's study provides an excellent example of how to bring this important aspect to the fore.

Recent work on questions of intervisibility between hillforts has raised some interesting questions. Matthews (2014) used GIS to look at questions of Iron Age tribal boundaries in the mid and north Welsh Marches area. He investigated whether visual links between hillforts can be used as a marker for a relationship existing between them. Did the communities utilising individual hillforts have an affiliation with other visible hillforts that produced bonds of kinship eventually developing into tribal connections? This is an innovative approach, raising new questions. However, it depends on having a very accurate chronology, as this theory only works if these hillforts can be shown to have been co-existent. The chronology for hillforts in this area of the Welsh Marches is perhaps not robust enough yet to fully support this approach. In the same area, Lloyd Jones (2017) used intervisibility as part of her examination of the connections between hillforts of the Clwydian Range and the surrounding area. She compared characteristics such as architecture and dates, taken from excavated examples, using visibility studies from and between hillforts, other features and the wider landscape. This is perhaps a more rigorous approach, with the chronology of hillfort usage within the subject area lying at the heart of her work. Murray (2018) used a GIS based analysis of hillfort location and morphology investigating whether movement, visibility and topography influenced hillfort location. An innovative aspect was the integration of movement with visibility through the creation of viewpaths. The study found that hillfort location was clearly influenced by these factors, but that the relationship was highly variable. Some hillforts exhibited evidence of blind facades whereby their most enclosed areas were situated where the site was least visible upon approach. At other sites there was evidence for the complete disregard for

ease of access with entrances placed offset from topographically defined routeways. These three different recent projects show how intervisibility and GIS based studies can tackle a wide range of ground-breaking approaches to aspects of hillfort usage. However, the Late Bronze Age hilltop enclosures examined here are not hillforts and therefore this approach, which works well for Iron Age sites, is not one that can be used in this thesis.

The crux of what is being ascertained when looking at landscape is what can we learn about these Late Bronze Age communities by analysing their choice of certain hilltops within their locale. Topographical information such as their height above ordnance datum and relative height within their individual landscape will be examined. Whilst topographical studies of hillforts have been done before, for example Forde-Johnson (1976), who based his classification of hillfort types on their topographical location, much of the work that has been done is on the location and orientation of the hillfort itself, in terms of the hillfort shape and placement on the hill, the hill itself and its place within the landscape (Bell and Lock 2000; Driver 2013; James 2007; Oatley *et al.* 2015). Hamilton and Manley (2001) conducted a topographical review of the hillforts of southeast England, attempting to 're-contextualize hillforts within their landscapes' (Hamilton and Manley 2001, 7) by assessing their topographical position, the views from the hillfort itself as well as how they were seen from a distance. This is a much more useful approach for this work and one that in many ways, whilst not replicating, will be adapted to fit the research parameters of this thesis. The existing hillfort topographically will not be examined by itself, as already stated these Late Bronze Age hilltop sites were often superseded by later developed hillforts, but a similar methodology to Hamilton and Manley (2001) will be used in terms of looking at the settlement's placement within its landscape.

Another methodological approach that Hamilton and Manley (2001) used effectively within their study is that of phenomenology. This is an area of archaeological theory that developed during the 1990s and has had a formidable influence within landscape archaeology. It was brought to national attention by Tilley's 1994 book; he believed that the landscape and places within it are more than just places, that they 'gather together persons, memories, structures, histories, myths and symbols' (Tilley 2004, 25). Therefore, to be able to understand the past, the landscape needs to be experienced in the same manner as those past people experienced it. It is an unorthodox approach that attracted many detractors, the most vocal being Andrew Fleming. Whilst acknowledging that looking at the landscape context of megaliths could be a 'potentially productive approach', without 'more source-critical rigour' this method would be little more than 'a form of dreaming' (Fleming 1999, 124). Brück (2005) argues that archaeology does indeed need to re-engage with the qualitative aspects of landscape. She sees the need to clarify how social and cultural meanings can be attributed to places, questioning whether the way modern phenomenological investigators and past peoples view a landscape can ever be comparable (Brück 2005, 45-47). Brück's critique is a valid one; it is indeed challenging for modern archaeologists to really understand how ancient communities viewed their surroundings, although this is a subject tackled by Hodder in his seminal work *Reading the Past* (Hodder 1986).

Beyond the critique, using phenomenological approaches such as Hamilton and Manley's 2001 study that looks at early hillforts as connecting with the landscape it visibly accesses, linking these sites to

major linear boundaries or to the sources of raw materials is worthwhile. It shows it is possible to use elements of phenomenology when studying hillforts whilst also maintaining the academic rigour necessary to prevent it from becoming Fleming's 'form of dreaming'. By looking at Late Bronze Age hilltop sites within their topographic emplacement, it may be possible to establish if there is a relationship between the location of these Late Bronze Age hilltop sites and their landscape setting that clarifies the settlement and material culture evidence that is found within them (Hamilton and Manley 2001, 11). This will get closer to extracting the social information from these sites necessary to ascertain why it was that these sites were established during the Late Bronze Age in Britain – my own take on phenomenology.

2.2.2 Landscape genealogies

> 'Accrued place-value may have been important in the establishment of the earliest hillforts. These are often in locations with conspicuous traces of previous ritual monuments. This may have been a means of validating new social practices through making links with the past.'
>
> (Hamilton and Manley 2001, 11)

There are some locations within the landscape where the layers of history and prehistory are obvious to see, as succeeding communities build their monuments on top of older ones; both referencing their ancestors, laying claim to that genealogy whilst asserting their right to the landscape. Hambledon Hill, Dorset, is one such place (Fig. 2.2); here Anglo-Saxon burials lay within the ramparts of an Iron Age hillfort. This in turn has Neolithic long barrows and Bronze Age round barrows within its circumference. The ramparts of the hillfort reference the lines of the much older Neolithic earthwork, that of a causewayed camp (Edmonds 1999, 3; Mercer and Healy 2008). The layers of history and memory are obvious here, and therefore send out strong messages about where these communities saw their place within an already ancient and encultured landscape. In examining the landscape genealogies of where hilltop sites were created in the Late Bronze Age, an understanding of the social dynamics behind the creation of these impressive monuments during this period of apparent societal upheaval at the end of the Bronze Age can be achieved (Pope 2015).

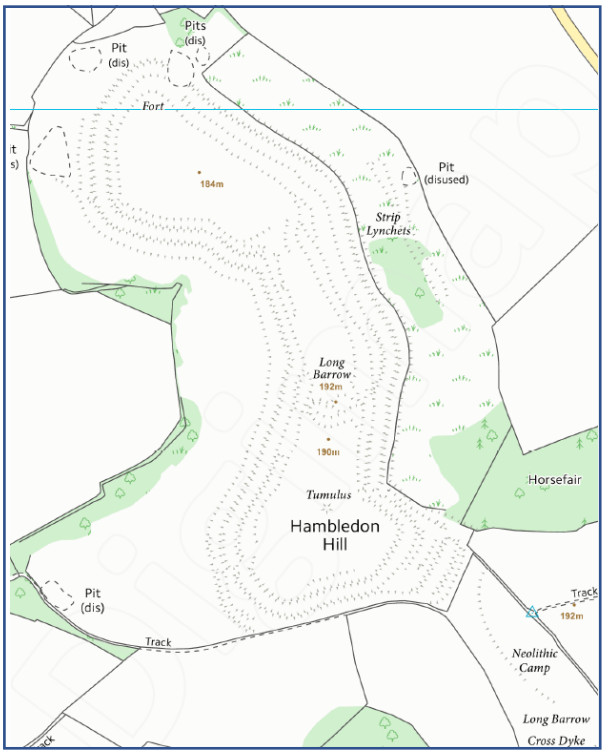

Figure 2.2 – Hambledon Hill, Dorset, showing archaeological remains from various time periods. @Crown Copyright / database right 2017. An Ordnance Survey / EDINA supplied service.

The question of landscape genealogies; of how communities understood their place within both the landscape and the history of occupation of that landscape is an area that has seen an increase in study in recent years (Bowden and McOmish 1989; Bradley 2002; Brück and Goodman 1999; Gosden and Lock 1998; Gerritsen 2007). Ingold wrote that 'the landscape is never complete: neither 'built' nor 'unbuilt', it is perpetually under construction' (Ingold 1993, 162). Edmunds' (1999) book *Ancestral Geographies of the Neolithic,* whilst a seminal work in many ways examining how the Neolithic peoples of Britain might have understood their place in the world, has a hyper-interpretative style that has drawn many critics most notably Fleming (2006). The overblown fictional accounts of the Neolithic peoples (for example 'the old man leant forward and spat into the fire …' (Edmunds 1999, 11) detracts from the important central message that 'through what some have called a 'technology of memory', people absorb, reuse and rework the past through their physical encounter with particular monuments and performative or ritual events' (Edmonds 1999, 7). By examining all the Late Bronze Age hilltop sites within these case study areas, the aim is to try and establish whether there is any evidence that these builders were referencing these older monuments, and whether, as Edmonds says, these sites were built on as a physical reminder of their ancestral past.

Gerritsen (2003) cites the work of an American travel writer and novelist Jonathan Raben (1996) who wrote a history of homesteaders in Montana, a vast area of open prairies. Thousands arrived in the early twentieth century attracted by the opportunity of free land, but they arrived into an unmeasurable open space without any geographical features. Unable to identify with the landscape, unable to see features that reminded them of home, many settlers were unable to take root, and most had left within a decade (Gerritsen 2003, 1). This modern example illustrates the importance of the interaction between people and the landscape they live in; that the sense of identity and bonding with the land is a basic

human emotion. Gerritsen's (2003) work in the Meuse-Demer-Scheldt (MDS) region of northwest Europe traced how the landscape developed alongside the communities that inhabited it. He investigated ideas of social identity and land tenure; how communities constructed their social identities through their interactions with the landscape. This aspect of Gerritsen's work, investigating the proportion of hillfort sites that reference earlier communities by building on hills that already have more ancient monuments on them is a useful one. By combining this with looking at settlement patterns within these Late Bronze Age communities as a whole, investigating whether there are interactions with earlier monuments, conclusions may be drawn about what possible connections these Late Bronze Age hilltop sites had with more ancient communities and how this might have influenced their social identities. Therefore, Gerristen's methodology, his approach to looking at the data from this large geographical area and chronological timespan, has been of great assistance in this research.

2.2.3 Regional identity

As already mentioned, questions of regional identity span many of the aspects of this research. For ease of study, the geographical locations of these Late Bronze Age hilltop sites were mapped and divided into regional groupings. However, this regionality goes much deeper than merely an easy way to divide up and study these sites for modern analysis. It allows us to reflect upon prehistoric material culture distributions, contact and exchange, settlement patterns and agriculture. Jones (2007, 128) examined questions of regionality when examining the Late Neolithic and Early Bronze Age in Britain and Ireland. Whilst looking at material culture and more specifically pottery, he questioned whether a particular pottery typology (for example Grooved Ware or Beakers) which occurred over a large geographical area could, through detailed analysis, show expressions of local identity. He traced different cultural histories for morphologically similar ceramic types and therefore showed that it is inadvisable to apply blanket cultural practices to similar material culture assemblages and very real local differences do occur. Although on many of the Late Bronze Age hilltop sites in this thesis there is little material culture, where larger assemblages occur it will be necessary to look at more than just typological similarities before accepting common cultural practice.

Another example of looking at regional identities in the Late Bronze Age is by examining metalwork hoards and depositions where there is clear evidence of regional variance. There is a substantial disparity between the nature of material found in the Thames Valley and Wessex when looking at the amount of Ewart Park and Llyn Fawr metalwork found. Ewart Park is Late Bronze Age whereas Llyn Fawr spans the Late Bronze Age / Early Iron Age transition period (Fig. 2.1). In the Thames Valley, there is much Ewart Park material but very little Llyn Fawr present. Wessex, by contrast, has lots of material from both traditions. This has been interpreted as a break in tradition occurring in the Thames Valley that did not occur in Wessex, suggesting that the traditions of exchange and deposition continued there much longer (Needham 2007; Sharples 2010, 102: Thomas 1997). Another original approach to looking at questions of clustering in hillfort locations, attempting to identify regional characteristics and identities, was used by Maddison (2019). He used Percolation Analysis, a method of analysing clustering developed in physics but widely used in geography. It identifies clusters based on Euclidean distances, which Maddison used to good effect identifying clusters based on attributes such as enclosed

area and hillfort size (Fig. 2.3), although again care will have to be taken over chronology as many of these hillforts have little or no chronological data available. However, he did identify some regional clusters, especially in Wales, the Marches and Cornwall that seem to have a resemblance to clusters in this work and was examined further to see if this really is a robust similarity, or merely a superficial one. These approaches to regionality and regional identity will inform how these questions are tackled within this work, as it is an area that could be very important when trying to understand the social processes that resulted in the creation of these sites in the Late Bronze Age.

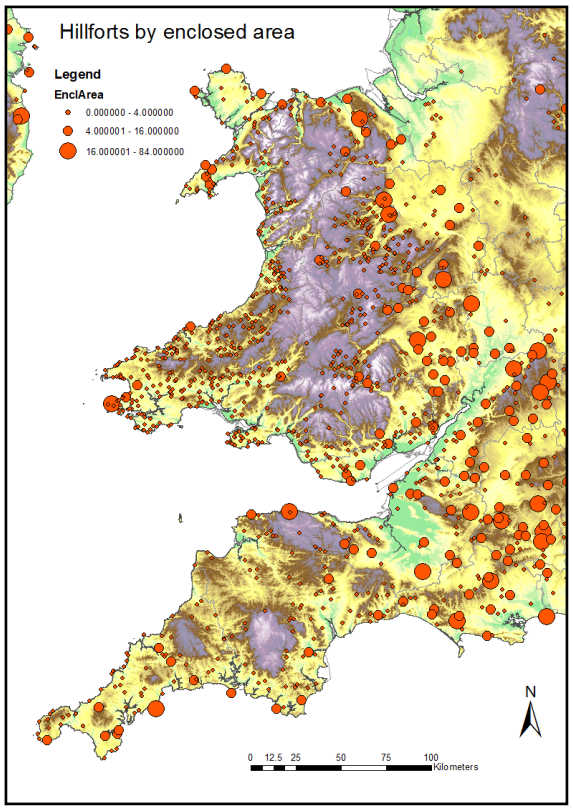

Figure 2.3 – Maddison's (2019) analysis of hillforts by enclosed area.

Hillfort sites have traditionally been seen as hubs for trade and exchange under the control of an elite: 'massive storage capacities implying the stockpiling of goods for redistribution' (Cunliffe 1991, 533), and this has received much criticism (Bowden and McOmish 1987; Hill 1995, 1996; Sharples 1991). Therefore, in order to establish what possible place Late Bronze Age hilltop sites played within the exchange mechanisms of the time, it was necessary to take a more nuanced approach such as Moore's (2007) work. Whilst he examined the Late Iron Age of western Britain, his methodological approach was useful. His theory of production and exchange over long distances encompassed a more complex understanding of the reasons behind this exchange, the perception of the landscape and where the raw materials were sourced. The special nature of the landscape where raw material comes from, in his example clay from the Malvern Hills, and how and where goods are made from these materials are important reasons why they are then exchanged over long distances (Moore 2007, 87). This examination of regional and community identity through what they exchange is a logical way of studying this topic and was applied to this dataset by plotting material culture distributions, mapping where

possible the origins of the raw materials these goods came from, illustrating possible similarities and differences between the material culture of these Late Bronze Age hilltop sites. This added to the social data that will hopefully begin to shed light on the reasons behind the development of these important monuments during the Late Bronze Age.

An area of regionality that is important within this project is that of the links between coastal communities, specifically between those in SW England and SW Wales. Material culture links between prehistoric SW England and the NW Atlantic zone, specifically between Armorica and Cornwall, have been noted for some time (Burgess 1968; Giot 1963). Much has been made of the similarities in settlement types between regions either side of the English Channel (Bradley 1997; Waddell 1992). However, links can also be seen either side of the Bristol Channel between SW England and Wales. Henderson (2007a, 314) considers the settlement patterns of these two areas to be so similar as to be considered together. He examines the settlement patterns, including those of promontory forts during the Early Iron Age in both areas and finds great commonalities. The sites present in both these areas will be examined in this thesis, especially the typology and distribution, to see if Henderson's assessment of areas that should be examined together holds true under scrutiny.

2.3 METHODOLOGY

The section above looked at methodologies being employed by academics when tackling areas of settlement and landscape archaeology pertinent to this work. This next section will outline the methodologies used in this thesis to create the dataset needed for the study of Late Bronze Age hilltop sites in the chosen study areas. These will fall into two main sections: the methods used in the collection of the raw data, and how it was then analysed for the landscape, settlement and the material culture chapters. This section does not try to come to any conclusions about the data but seeks to show how the data used in the subsequent analysis chapters was assembled. By understanding the parameters used when gathering the data, the analysis made using this information and the conclusions reached should be made clearer.

2.3.1 Data Collection

In order to investigate Late Bronze Age hilltop sites in the Atlantic west of Britain, the geographical area of study for this thesis includes SW England and Wales and the Marches. Scottish sites of this era have been studied in a separate project at the University of Edinburgh with Simon Wood's (2017) PhD thesis entitled *How many hillforts are there in Western Scotland?* Which compared aspects of size, morphology and landscape position of later prehistoric enclosure sites in Kintyre, Skye and the Stewartry of Kirkcudbright'. So, to avoid duplication, and to keep the data set manageable, only English and Welsh sites in Atlantic western Britain were investigated. The first step was to investigate all hillforts within these study areas to ascertain potential for Later Bronze Age activity. To do this, a list was first made of all hillforts within the study areas, county by county. This was an extensive exercise, drawing on numerous different sources such as books that had lists of hillforts such as Hogg (1979), those that examined the place of hillforts in Iron Age society like Henderson (2007) and books that examined

different regional locations like Driver's work on the landscape of mid-Wales (2013). Wide ranging use was made of websites such as the lists of hillforts available on county HER websites, various county archaeological trust websites containing lists of hillforts for their region and general interest websites, such as the Megalithic Portal (www.megalithic.co.uk) which lists hundreds of hillforts. The Atlas of Hillforts website, which was launched in June 2017, would have helped this research as it brings together all evidence for hillfort sites into a single location, however the data collection for this thesis was completed before its launch.

It is important at this point to explain some of the decisions made as to what forms evidence of Late Bronze Age hilltop sites. The first decision that had to be made was the period of time that constituted the British Late Bronze Age, as this is an area where academics still do not completely agree. Although agreement does exist that it was a period of transition broadly occurring from the end of the second millennium BC to the beginning of first millennium BC, there is disagreement over the exact dating of this period. All Late Bronze Age dating schemes are constructed from pottery and metalworking assemblages, as well as from settlement evidence, and have been defined in different ways (Burgess 1968; Champion 1999, 96; Henderson 2007; Needham 1996, 2007). Four of the most influential academics of recent years date the Late Bronze Age in the following ways:

- Needham proposed a revised chronology of the LBA based on pottery and metalworking assemblages (Fig. 2.1), with the post Deverel-Rimbury Plainware pottery phase and Wilburton, Ewart-Blackmoor and mature Ewart metalworking assemblages all broadly corresponding to his LBA dating to between 1150-800 BC (Needham 2007, 40).
- Henderson dates the Atlantic Late Bronze Age to between 1200–600 BC based on typological divisions of metalwork within the Atlantic region of western Britain, Ireland, western France and Iberia as a whole (Henderson 2007, 62). This might be a useful approach when conceptualising the entire Atlantic region, however it is too broad brush when considering solely the British Late Bronze Age.
- Brück chose to date the Late Bronze Age to between 1150 BC and the period up to 600 BC to include the full range of post-Deverel-Rimbury pottery and Llyn Fawr metal work (the final phase of Bronze Age metalworking that spans the LBA-EIA transition period between *c.* 800 – 600 BC) (Brück 2007, 24).
- Pope based her dating of the period in northern Britain to between 1000-800 BC denoting a very significant episode of change in the settlement record (Pope 2015, 177); however, a clear shift in house types can also be identified in her data at *c*. 1250 BC (*ibid*. Fig. 2.4), bringing the settlement data in line with an earlier transition from the metalwork (R. Pope pers. comm. 2020).

In taking all these dating schemes into consideration, I have chosen to date the Late Bronze Age in this work as occurring between 1200–750 BC to try and encompass the typological dating schemes and the important phase of the transition to the Earliest Iron Age which occurred at 800 BC (Needham 2007; Haselgrove and Pope 2007, 4; Pope 2015). Whilst his does not fully settle the issue of Llyn Fawr metalworking tradition surviving until 600 BC, social factors such as the dramatic decrease in metal deposition and clear changes in the settlement record around 800 BC gives weight to the transition

between the end of the Bronze Age and earliest Iron Age occurring between 800 – 750 BC (Brück 2007; Needham 2007; Pope 2007, 2015).

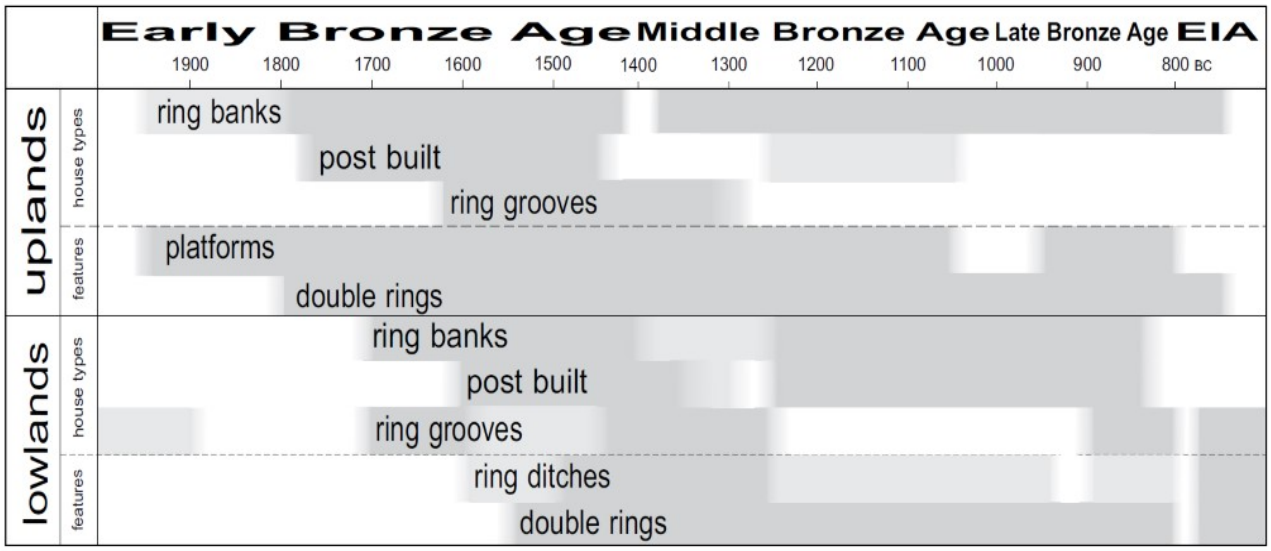

Figure 2.4 – A dated typology of northern Bronze Age roundhouses (n=90). (Pope 2015, 178)

Once the list of hilltop sites had been collated, it consisted of in excess of 1000 individual sites but no details about the sites themselves. The next step was to examine all of the sites in more detail to see if any mention was made of Late Bronze Age material. This was done in the first instance by inputting the names of each hillfort into the PastScape and Coflein websites. In England, PastScape (www.pastscape.org.uk) made available online the records held in the National Record of the Historic Environment (NRHE), however this website was replaced after this work was done by the Heritage Gateway (www.heritagegateway.org.uk). In Wales, Coflein (www.coflein.gov.uk), the National Monument Record of Wales (NMRW) was used. These websites hold the records for each site of archaeological interest with the following details:

- Map Ref / Grid Ref
- Unitary (Local) Authority / County / Community
- Type of Site
- Broad class
- Period
- Detailed Site Description
- References

From the site description, it was usually possible to assess if the site had a Bronze Age element and where more details about it could be found. A working document consisting of all sites with Late Bronze Age material was then created, with details of the possible evidence and a list of all references to the site. This formed the basis for the comprehensive examination of all possible Late Bronze Age sites. Each one of these references to sites with Late Bronze Age material was then consulted to glean all of

the details about the site. Some of these references were readily available, but many were in the grey literature and were much more difficult to source. In many instances the individual county HER teams or archaeological trusts (Wales) were consulted for assistance in locating the references. The details of all the Late Bronze Age evidence was recorded in an Excel Database, which consisted of two spread sheets per site – one detailing material culture and the other occupation evidence. During this process, it was ascertained that some of the Late Bronze Age accreditation did not stand up to detailed scrutiny and they were taken off the list. For example, Tre'r Ceiri Hillfort in Gwynedd had been mentioned on general websites as having a Late Bronze Age element. On further examination, however, this proved to be incorrect and the site was therefore removed from the list (www.Coflein.gov.uk); Archaeology in Wales - 1991 Volume 31, 16; 1992 Volume 32, 57; 1993 Volume 33, 49-50; 1994 Volume 34, 46-7; 1998 Volume 38, 98). Conversely, sites found to be Late Bronze Age which had been missed off the original list were added. However, this was not a static list and was constantly under review. A re-examination of the sites on the list was undertaken after writing the data-driven chapters on landscape, settlement and material culture, as I was dissatisfied with some of the sites originally included on the list. This led to four sites being excluded from the dataset resulting in all the statistics having to be recalculated. However, in the end this was felt to be a more robust dataset. Initially standing at 55, this dataset finally yielded 40 sites: 14 in SW England; and 26 in Wales/Marches (Tables 2.1).

Name	Excavated		LBA Enclosure		LBA Dating Evidence			LBA Settlement Evidence		LBA material culture	
	Yes	No	Yes	No	C14 / OSL	Material culture	Typology	Yes	No	Yes	No
Wales / Marches											
The Breiddin Powys	✓		✓		✓	✓	✓	✓		✓	
Ffridd Faldwyn Powys	✓		✓			✓	✓	✓		✓	
Crowthers Camp Powys		✓		✓		✓			✓	✓	
Llwyn Bryn Dinas Powys	✓		✓		✓	✓			✓	✓	
Old Oswestry Shropshire	✓		✓			✓	✓		✓	✓	
The Wrekin Shropshire	✓			✓	✓	✓		✓		✓	
Woodhouse Cheshire	✓		✓		✓				✓		✓
Eddisbury Cheshire	✓		✓		✓	✓			✓	✓	
Helsby Cheshire	✓		✓		✓				✓		✓
Beeston Castle Cheshire	✓		✓		✓	✓		✓		✓	
Kelsbarrow Cheshire	✓		✓		✓	✓			✓	✓	
Moel y Gaer, Rhosesmor Flintshire	✓		✓		✓	✓			✓	✓	
Dinorben Denbighshire	✓		✓		✓	✓		✓		✓	
Castell Odo Gwynedd	✓			✓		✓		✓		✓	
Castel Rhyfel Ceredigion		✓		✓			✓		✓		✓
Lluest y Trafle Ceredigion		✓		✓			✓		✓		✓
Caer Cadwgan Ceredigion	✓		✓		✓				✓		✓
Darren Camp Ceredigion											
Bryn Maen Caerau Ceredigion	✓		✓		✓				✓		✓

Pendinas Lochtyn Ceredigion	✓			✓	✓			✓			✓
Berry Hill Pembrokeshire	✓		✓		✓			✓			✓
Dale Fort Pembrokeshire	✓		✓		✓			✓			✓
Great Castle Head Pembrokeshire	✓			✓	✓		✓	✓			✓
Tower Point Rath Pembrokeshire	✓			✓			✓		✓		✓
Porth y Rhaw Pembrokeshire	✓			✓	✓	✓		✓		✓	
Coygan Camp Carmarthenshire											
SW England											
Hambleton Hill Dorset	✓			✓		✓			✓	✓	
Poundbury Dorset	✓		✓			✓		✓		✓	
Chalbury Dorset	✓			✓		✓		✓		✓	
South Cadbury Somerset	✓		✓		✓	✓		✓		✓	
Ham Hill Somerset	✓		✓		✓	✓		✓		✓	
Norton Fitzwarren Somerset	✓		✓		✓	✓		✓		✓	
Castle An Dinas Cornwall		✓	✓				✓		✓		✓
Trencrom Cornwall		✓		✓		✓	✓		✓	✓	
Killibury Cornwall	✓			✓	✓			✓		✓	
Lescudjack Cornwall		✓		✓			✓		✓		✓
Bosigran Cornwall		✓		✓			✓		✓		✓
Maen Castle Cornwall											
St Michaels Mount Cornwall		✓		✓		✓		✓		✓	
Kendijack Cornwall		✓		✓		✓			✓		✓

Table 2.1 – Details of Late Bronze Age hilltop site dataset.

2.3.2 Non-hilltop Settlement Sites

In order to be able to compare and contrast these hilltop sites with what was happening within communities, it was necessary to create a case study group of non-hilltop settlement type sites, within the same Atlantic west of Britain area. This non-hilltop group was especially useful when looking at the settlement and material culture evidence, as it provided a direct comparison with what was happening at these hilltop sites. This in turn assisted in establishing whether there was something different about how these hilltop sites were being used within their communities. To establish this non-hilltop settlement type group, only settlements dating to the Late Bronze Age and in the correct geographical zone were chosen. This effectively ruled out some settlement types such as ringforts, as these only occur further east (McOmish 2018). In some areas within the Atlantic west of Britain, it was very difficult to find settlements other than hilltop sites for this period. In the central Welsh Marches, for example, the principal settlement sites are recorded on hilltops with no Late Bronze Age settlements having been found in the river valleys and floodplains (Halstead 2011, 66). In contrast, Cornwall has many Late Bronze Age non-hilltop settlement sites well excavated and recorded as opposed to hilltop sites (Jones and Taylor 2010; Jones *et al.* 2015; Nowakowski et al 2007). These sites have all been well excavated

and recorded as the majority were developer-driven archaeology. Therefore, unlike many hilltop sites where the quality of evidence has been shown to be poor, these sites have, in general, excellent quality evidence. In total, twenty different sites were chosen, detailed in Fig. 2.5 / Table 2.2 below, and will be used primarily with the Settlement and Material Culture chapters to present a contrast to the hilltop sites. Further details can be found at Appendix Five.

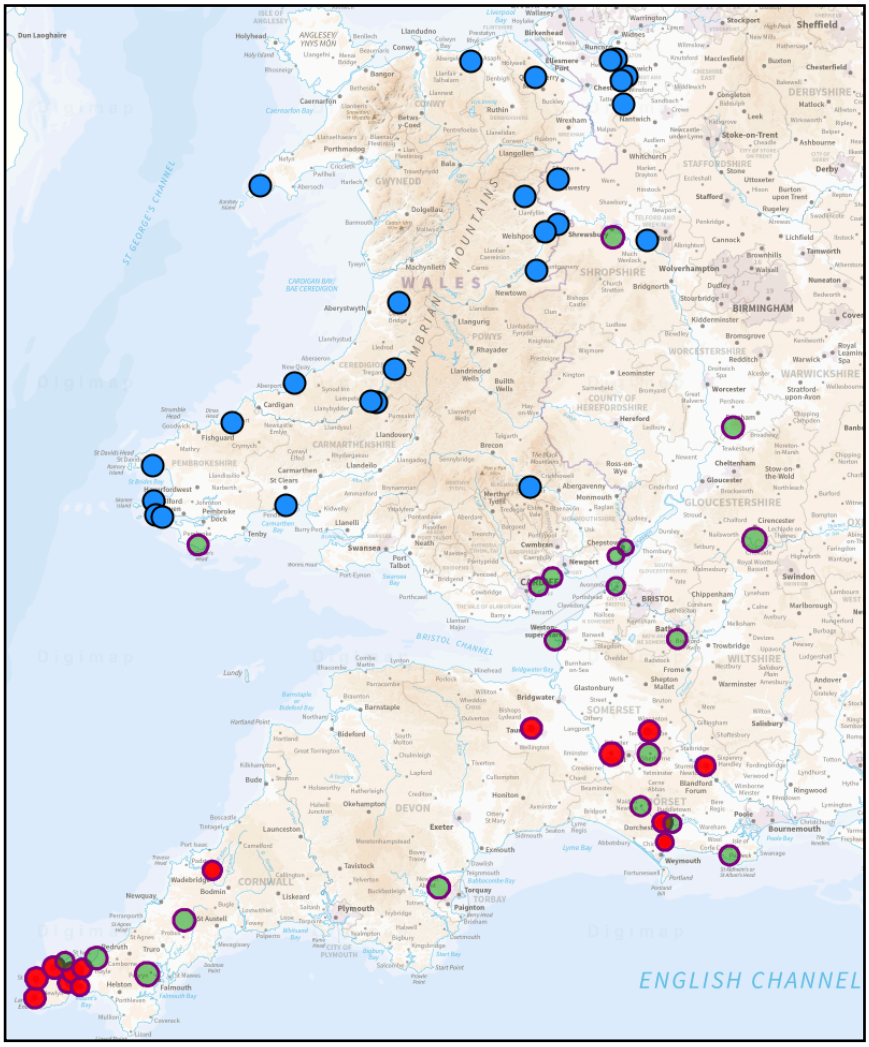

Figure 2.5 – All sites included in this thesis

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Name	Excavated		Site Type	LBA Dating Evidence			LBA Settlement Evidence		LBA material culture	
	Yes	No		C14 / OSL	Material culture	Typology	Yes	No	Yes	No
England										
Sharpstone Hill Shropshire	✓		Settlement with field boundaries		✓		✓		✓	
Huntsman's Quarry Worcestershire	✓		Settlement site – LBA occupation areas and field systems spreading over 8 ha	✓	✓		✓		✓	
Shorncote Quarry Gloucestershire	✓		Extensive unenclosed settlement	✓	✓		✓		✓	
Brean Down Somerset	✓		Midden site	✓	✓		✓			
Combe Hay Somerset	✓		Settlement site with possible ceramic manufacturing	✓	✓		✓		✓	
Cabot Park Sites Bristol	✓		Foreshore settlement sites	✓	✓		✓		✓	
Coburg Road, Dorchester, Dorset	✓		Settlement site	✓	✓		✓		✓	
Eldon's Seat Dorset	✓		Midden site	✓	✓		✓		✓	
Hog Cliff Hill Dorset	✓		Settlement with field boundaries	✓	✓		✓		✓	
Tinney's Lane, Sherbourne Dorset	✓		Settlement site with ceramic manufacturing	✓	✓		✓		✓	
Dainton Devon	✓		Open settlement		✓		✓		✓	
Gwithian Cornwall	✓		Settlement site	✓	✓		✓		✓	
Scarcewater Cornwall	✓		Palisaded settlement site	✓	✓		✓		✓	
Tremough Cornwall	✓		Enclosed settlement site	✓	✓		✓		✓	
Trewey Down Cornwall	✓		Settlement site		✓		✓		✓	
Wales										
Caldicot Castle Lake Gwent	✓		Riverside site with fishing structure	✓	✓		✓		✓	
Chapeltrump 1 & 2 Gwent	✓		Foreshore settlement site	✓	✓		✓		✓	
Rumney Great Wharf Gwent	✓		Foreshore settlement site	✓	✓		✓		✓	
Thornwell Farm Gwent	✓		Settlement site		✓		✓		✓	
Stackpole Warren Pembrokeshire	✓		Enclosed settlement and midden site	✓	✓		✓		✓	

Table 2.2 – Details of Late Bronze Age non-hilltop site dataset.

2.3.3 Data Quality

The evidence falls into a number of categories based on the quality of the data for each individual site. It is quite clear to see that there are vast differences between sites, with some being thoroughly and professionally excavated with Late Bronze Age material securely dated both stratigraphically, typologically and by radiocarbon dating. Other sites have little more than stray pieces of Late Bronze Age pottery found in unrecorded locations on site, or indeed were only dated to the Late Bronze Age due to a typological similarity to other sites that had some Late Bronze Age evidence. It is necessary to examine all the evidence from these hilltop locations to get a complete picture of what was taking place in the Late Bronze Age on these sites. However, it is true to say that better excavated and dated sites

will form a much greater part of the in-depth analysis of these Late Bronze Age hilltop sites as opposed to those with little evidence. A system of grading these sites was constructed to take into account the differing levels of evidence. This grading is not a comment on the quality of the excavation itself, but rather on the levels of evidence and the certainty to which the site can be described as a Late Bronze Age hilltop site. An explanation of the different grades is shown in Table 2.3, with the results of this grading exercise summarised for each area at Table 2.4. The full list of the grading for individual sites is in Appendix One.

EXCELLENT
Professionally excavated sites, with good stratigraphic evidence. A wide range of dateable artefacts and settlement evidence is present which are well recorded, and excavation results are published in detail. Radiocarbon dates available to confirm Late Bronze Age hilltop site classification.
GOOD
Professionally excavated sites with good stratigraphic evidence. Some dateable artefacts and/or settlement evidence is present, but not as wide a range. May have radiocarbon dates present to confirm dating, but not necessarily. Published as report confirming Late Bronze Age hilltop site classification.
FAIR
Professionally excavated sites, with good stratigraphic evidence and some Late Bronze Age evidence present. May have radiocarbon dates, but the evidence for LBA hilltop site may be weak. Published as a report, but possibly without the necessary details or strength of evidence to definitively confirm classification as a Late Bronze Age hilltop site.
POOR
Sites which have been excavated but only have a little Late Bronze Age evidence which although present, is tenuous. Also unexcavated sites, dated on basis of stray Late Bronze Age finds or typological similarities to other similar nearby Late Bronze Age hilltop sites.

Table 2.3 – Grading system for data quality relating to classification of site.

	Excellent	**Good**	**Fair**	**Poor**
Wales/Marches (n=26)	12%	19%	50%	19%
SW England (n=14)	7%	21%	29%	43%
Non-hilltop (n=20)	55%	45%	-	-

Table 2.4 – A summary of the quality of evidence for entire data set.

When the list of Late Bronze Age hilltop sites was finished, the sites were then mapped using Edina Digimap. For ease, the collation of data had been done on a county-by-county basis as this is how the records are now kept, however, it became clear when mapped that there were broad clusters that transcended modern unitary borders, so the Late Bronze Age hilltop sites for both study areas were divided up into clusters for analysis (Figs. 2.6 and 2.7). In W/M these clusters were; Cheshire, Flintshire and Conwy; Powys and Shropshire; Pembrokeshire and Carmarthenshire and finally Ceredigion. SW

England was subdivided into Somerset, Dorset and Cornwall. These cluster groups have been used as the basis for subsequent analysis of all the data. However, it is worth noting that these clusters are in many ways still quite arbitrary in nature, and the possibility of more meaningful regional or cultural groupings will be examined during the course of the thesis.

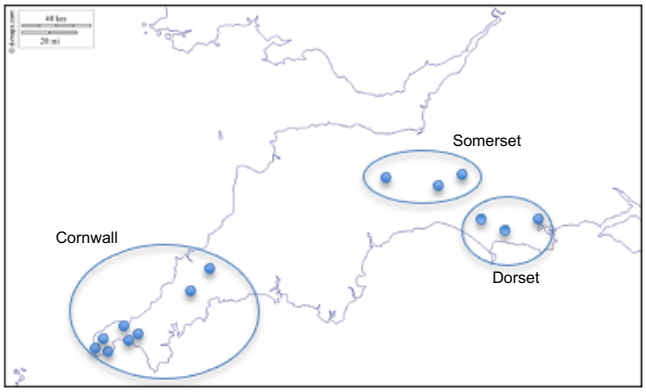


Figure 2.6 – Cluster groups for SW England.

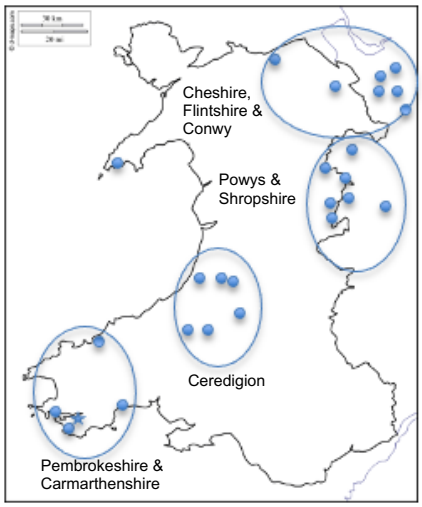


Figure 2.7 – Cluster groups for Wales/Marches.

2.3.4 Establishing Chronology

The radiocarbon dating used within this thesis comes from sites where some of these samples are now decades old. However, all radiocarbon dates cited here from these sites were recalibrated in 2017 using the then latest version of the program OxCal v4.3 (InCal 13 atmospheric curve, Reimer *et al*. 2013), and the date ranges cited throughout this study are at 95% standard deviation (Bronk Ramsey 2009). Even with this recalibration, it must be noted that there are limitations with these samples. Many of these dates come from samples that in modern excavations would not be considered secure enough to use, such as charcoal found in general rampart locations. The *Dating of Early Neolithic Enclosures in Southern Britain and Ireland Project*, conducted in 2011 by a group of leading archaeologists, created a list of twelve categories of samples that can be securely used for radiocarbon dating (Whittle *et al.* 2011, 40). General samples of charcoal do not appear on this list, and therefore would not be acceptable

today. The use of radiocarbon dating has also developed since the time of these excavations. Instead of single dates being viewed as providing a 'good objective chronology' (Renfrew 1973, 109), the modern Bayesian approach seeks to use radiocarbon dates in ways that are 'contextual and interpretative' (Whittle *et al*. 2011, 20), with 'far greater attention given to the critical association between the sample, the context from which it was recovered and the archaeological event that the dating programme targets' (*ibid*. 2011, 59). Therefore, whilst these older radiocarbon dates are referred to in this research as no other ones are available, it is with the full knowledge that some of them do not meet either modern selection criteria or interpretative methodology. However, only secure samples have been used to create the chronology discussed later in this thesis. The field of hillfort studies has benefitted from the ARHC sponsored *Atlas of Hillforts in Britain and Ireland Project* reassessing the dating data available under modern conditions and using a Bayesian approach. This provides a much more rigorous and accurate framework from which studies such as this thesis benefit. Once all available dates were recalibrated, an attempt was made to construct a chronology for both the hilltop and non-hilltop sites.

There is a variety of both types and quality of dating evidence. Tables 2.5 and 2.6 below show the range of dating evidence for both SW England and Wales/Marches. Only 40% of all these sites have any radiocarbon dates, and of these 33% have only a single date (Fig. 2.8). Dates were initially recalibrated using OxCal version 4.3 (Bronk Ramsey 2009), and those cited in this work are at 1 sigma, with details of all dates at both 1 sigma and 2 sigma in Appendix Two. Where a number of dates occurred, these were plotted to try and establish phases within the site with the contextual evidence available being key. Details of all sites can also be found in Appendix Two. A group of non-hilltop Late Bronze Age settlements from within the case study areas of Wales/Marches and SW England have also been examined to provide a comparison to the hilltop sites. Of these sites, 75% had radiocarbon dates, with 40% of these being single dates. However, unlike the hilltop sites, where the maximum number of dates for a single site was ten at The Breiddin, Powys (Musson *et al.* 1991), these non-hilltop sites generally had more radiocarbon dates, with Huntsman's Quarry, Worcestershire (Jackson 2015) having 29 radiocarbon dates, and Tinney's Lane, Dorset (Best and Woodward 2011) having 25 (Fig. 2.9). Some of these sites have much longer life-spans than just the Late Bronze Age, with many such as Beeston Castle, Cheshire, (Ellis 1993) having both earlier (Neolithic) and later (Iron Age) prehistoric phases. The dates used in this work relate solely to the Late Bronze Age phases of these sites' existence.

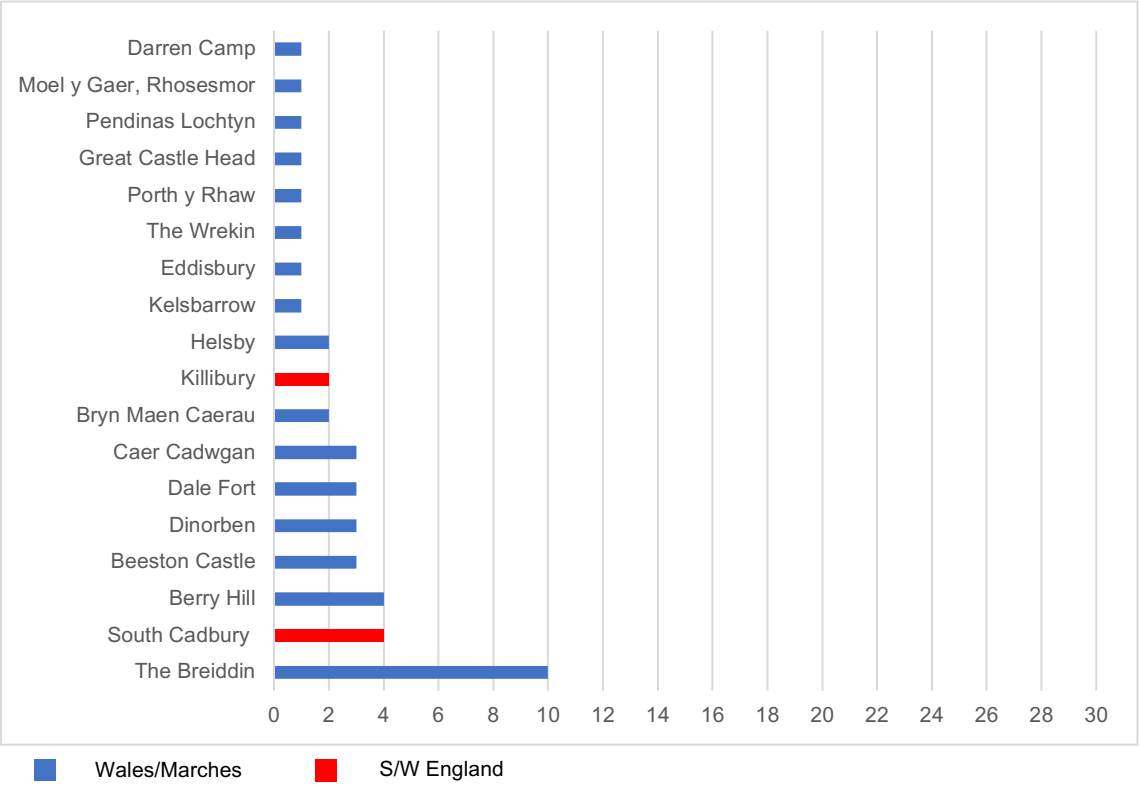


Figure 2.8 – Number of Late Bronze Age radiocarbon dates for hilltop sites in both case study areas.

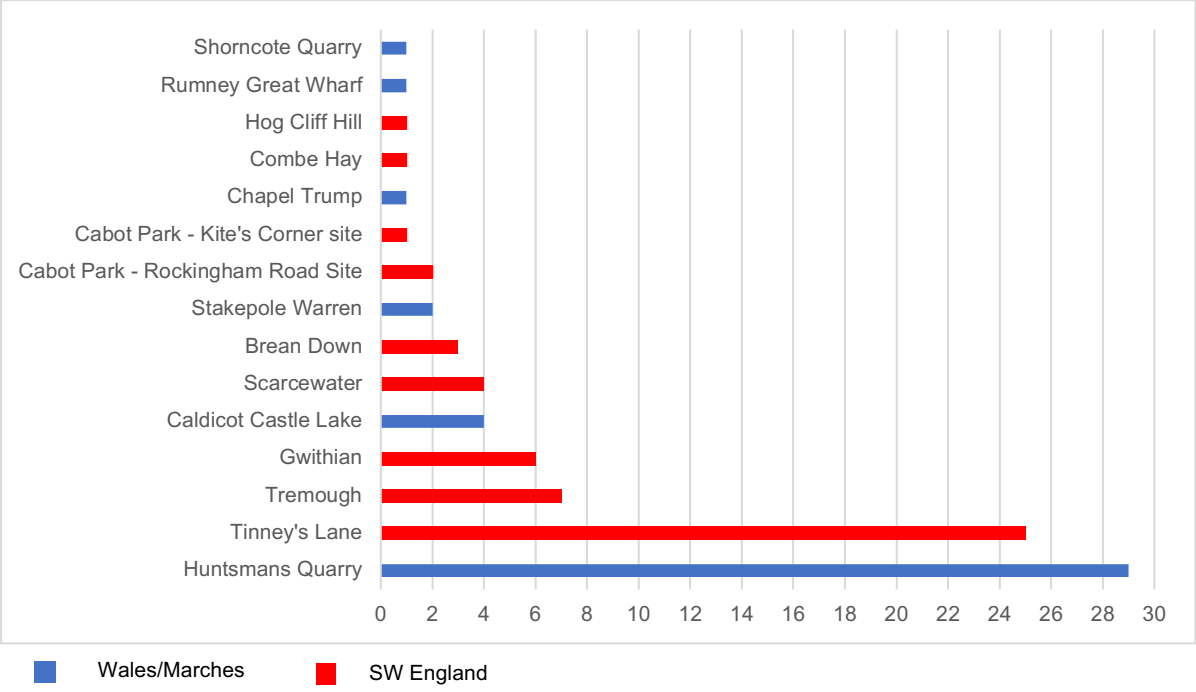


Figure 2.9 – Number of Late Bronze Age radiocarbon dates for non-hilltop sites.

	C14	Pottery	Metal artefacts	Ornaments	Rampart Architecture	Typological similarities
South Cadbury	✓	✓	✓	✓		
Poundbury		✓			✓	
Norton Fitzwarren		✓	✓			
Hambleton Hill		✓				

Ham Hill		✓	✓		✓	
St Michaels Mount		✓	✓			
Maen Castle					✓	✓
Killibury	✓	✓				
Kendijack			✓			
Trencrom		✓			✓	✓
Castle-an-Dinas					✓	
Chalbury		✓				
Bosigran						✓
Lescudjack Castle						✓

Table 2.5 - Types of dating evidence for SW England group of Late Bronze Age hilltop sites

	OLS	C14	Pottery	Metal artefacts	Ornaments	Rampart Architecture	Palisade	Structure	Typological similarities
Eddisbury		✓	✓				✓		
Kelsbarrow		✓							
Beeston Castle		✓	✓	✓	✓	✓			
Woodhouse	✓								
Helsby		✓		✓	✓				
Moel y Gaer Rhosesmor		✓		✓					
Dinorban		✓	✓	✓		✓			
Castell Odo		✓	✓						
Old Oswestry			✓						✓
The Wrekin		✓	✓					✓	
Llywn Bryn-Dinas			✓			✓			
The Breiddin		✓	✓	✓	✓	✓	✓		
Crowther's Camp				✓					
Fridd Faldwyn					✓				
Lluest y Trafle									✓
Darren Camp		✓	✓						✓
Pendinas Lochtyn		✓							✓
Castell Rhyfel									✓
Caer Cadwgan		✓						✓	✓
Bryn Maen Caerau		✓				✓			
Porth y Rhaw		✓		✓					✓
Great Castle Head		✓							✓
Tower Point Rath									✓
Berry Hill		✓							✓
Dale Fort		✓				✓			✓
Coygan Camp			✓						

Table 2.6 - Types of dating evidence for Wales/Marches group of Late Bronze Age hilltop sites.

Of the sites within the study areas of Wales/Marches and SW England that have radiocarbon dates, 57% of these dates fall between the 13th and 10th centuries BC, 32% falling between the 10th and sixth centuries BC and 11% have dates that fall equally between the two. The non-hilltop settlement sites have a very similar spread, having 60% occurring between the 13th and 10th centuries, with 20% between the 10th and sixth centuries BC with 20% equally between the two. Given the small sizes of the samples, these are almost identical proportions. Figs. 2.10 and 2.11 below show the dates for all sites, with different phases when identified within a single site shown as a separate entry, showing a more extended chronology when compared to the hilltop sites. There is, of course, the possibility that this is merely the result of excavation bias, with these results reflecting only the dates of the sites excavated rather than an actual trend within the dating of these types of sites. However, the non-hilltop sites seem to have a slightly more extended life within these chronological sub-groups.

The differences between the two datasets suggests that the hilltop sites may be more ephemeral than the slightly longer-lasting non-hilltop, lowland sites. Again, the small sample size is a problem, but the data could indicate differences in how long these two settlements types were utilised by their communities. This would be worthy of further study to ascertain whether this is actually a real trend being suggested by these dates, or an accident resulting from the reduced sample size and excavation bias. More excavation would hopefully provide more dating evidence that would confirm whether this was an actual trend, or not. Whilst these chronologies are important by themselves, it will be through combining the settlement and material culture evidence with the chronological details that a more sophisticated understanding of the reasons behind the establishment of these sites will be achieved, therefore chronology will be revisited in Chapter Seven of this thesis.

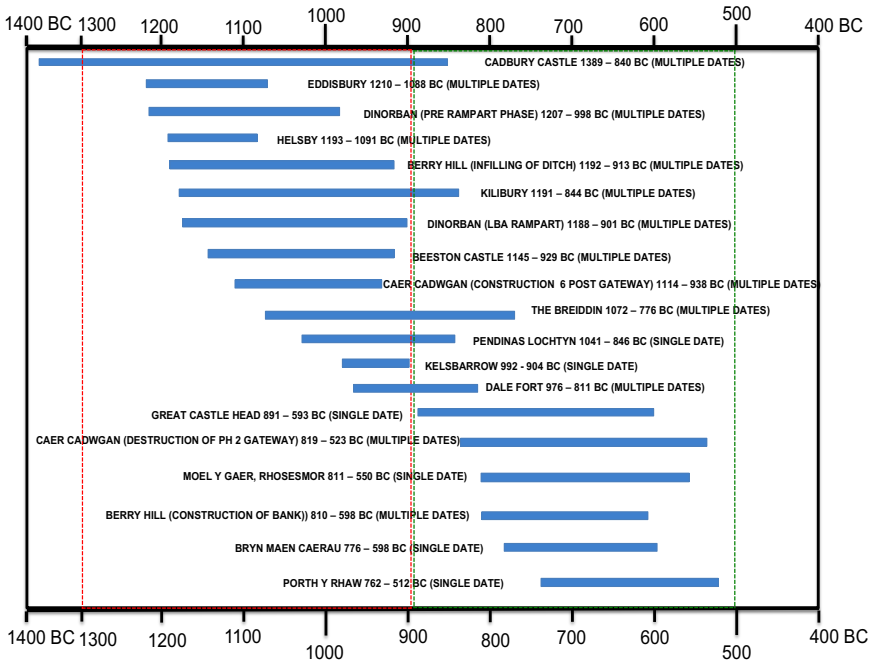

1400 BC
1300
1200
1100
1000
900
800
700
600
500
400 BC
CADBURY CASTLE 1389 – 840 BC (MULTIPLE DATES)
EDDISBURY 1210 – 1088 BC (MULTIPLE DATES)
DINORBAN (PRE RAMPART PHASE) 1207 – 998 BC (MULTIPLE DATES)
HELSBY 1193 – 1091 BC (MULTIPLE DATES)
BERRY HILL (INFILLING OF DITCH) 1192 – 913 BC (MULTIPLE DATES)
KILIBURY 1191 – 844 BC (MULTIPLE DATES)
DINORBAN (LBA RAMPART) 1188 – 901 BC (MULTIPLE DATES)
BEESTON CASTLE 1145 – 929 BC (MULTIPLE DATES)
CAER CADWGAN (CONSTRUCTION 6 POST GATEWAY) 1114 – 938 BC (MULTIPLE DATES
THE BREIDDIN 1072 – 776 BC (MULTIPLE DATES)
PENDINAS LOCHTYN 1041 – 846 BC (SINGLE DATE)
KELSBARROW 992 - 904 BC (SINGLE DATE)
DALE FORT 976 – 811 BC (MULTIPLE DATES)
GREAT CASTLE HEAD 891 – 593 BC (SINGLE DATE)
CAER CADWGAN (DESTRUCTION OF PH 2 GATEWAY) 819 – 523 BC (MULTIPLE DATES)
MOEL Y GAER, RHOSESMOR 811 – 550 BC (SINGLE DATE)
BERRY HILL (CONSTRUCTION OF BANK)) 810 – 598 BC (MULTIPLE DATES)
BRYN MAEN CAERAU 776 – 598 BC (SINGLE DATE)
PORTH Y RHAW 762 – 512 BC (SINGLE DATE)

Figure 2.10 - All hilltop sites with radiocarbon dates

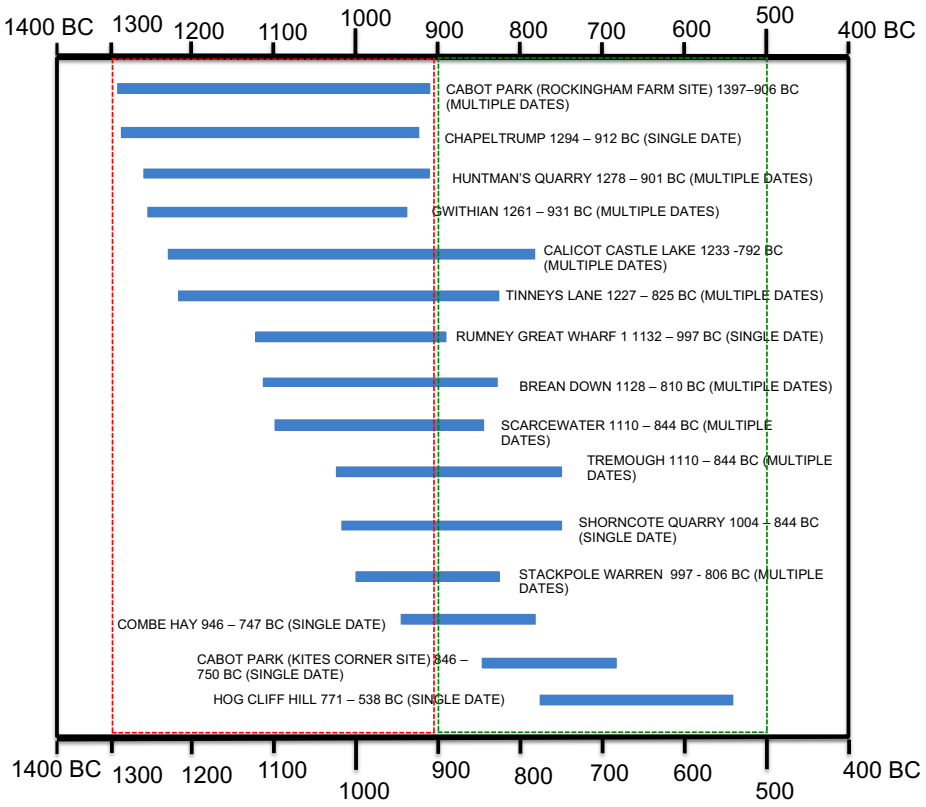

1400 BC
1300
1200
1100
1000
900
800
700
600
500
400 BC
CABOT PARK (ROCKINGHAM FARM SITE) 1397–906 BC (MULTIPLE DATES)
CHAPELTRUMP 1294 – 912 BC (SINGLE DATE)
HUNTMAN'S QUARRY 1278 – 901 BC (MULTIPLE DATES)
GWITHIAN 1261 – 931 BC (MULTIPLE DATES)
CALICOT CASTLE LAKE 1233 -792 BC (MULTIPLE DATES)
TINNEYS LANE 1227 – 825 BC (MULTIPLE DATES)
RUMNEY GREAT WHARF 1 1132 – 997 BC (SINGLE DATE)
BREAN DOWN 1128 – 810 BC (MULTIPLE DATES)
SCARCEWATER 1110 – 844 BC (MULTIPLE DATES)
TREMOUGH 1110 – 844 BC (MULTIPLE DATES)
SHORNCOTE QUARRY 1004 – 844 BC (SINGLE DATE)
STACKPOLE WARREN 997 - 806 BC (MULTIPLE DATES)
COMBE HAY 946 – 747 BC (SINGLE DATE)
CABOT PARK (KITES CORNER SITE) 846 – 750 BC (SINGLE DATE)
HOG CLIFF HILL 771 – 538 BC (SINGLE DATE)

Figure 2.11 - All non-hilltop settlement sites with radiocarbon dates

2.4 METHODOLOGY EMPLOYED FOR THE LANDSCAPE CHAPTERS

The Landscape chapter of this thesis is concerned with examining the landscape settings of these Late Bronze Age hilltop sites. In many cases it is impossible to look at the Late Bronze Age hilltop site itself as they tend to be buried beneath later Iron Age hillforts. However, a detailed look at the hills on which these earlier sites occurred is informative as it may yield information as to why these hills were chosen in the first case. Three main areas were examined: the height above ordnance datum; the type and proximity of water sources; and the presence of more ancient monuments on the same hill.

2.4.1 Height Above Ordnance Datum (AOD)

The height above ordnance datum (AOD) was calculated using the grid references for individual sites, which appeared on either the PastScape or Coflein websites and which had been gathered during the data collection phase. This was then put into www.mapmate.co.uk, which gives the height above sea level for each point. This data was analysed on three levels: all data; by region; and by cluster; and was used to look at a range of information. Firstly, for each level, the landscape type was categorised as follows:

- High Upland (400-600 m)
- Moderate Upland (200-399 m)
- Lowland (0-199 m)

- Coastal

This was to examine how the Late Bronze Age hilltop sites fitted into their wider surroundings. To further scrutinize their landscape settings, the AOD of each individual site was examined to ascertain where it stood in its locality. Using Edina Digimap 1:25,000 Scale Colour Raster, the heights of no less than 10 nearby hilltops were recorded, within an area roughly 100 km^2. These were then plotted on a scatter graph, to see how the height of each hillfort compared with those of the neighbouring hills.

2.4.2 Proximity to water

Analysis was conducted of the proximity of the site to various water sources. It must be stressed at this point that this analysis was carried out knowing that there would have been changes to the landscape in the three thousand years since these monuments were first constructed. However, it was felt that the change would not have been so significant as to render this analysis invalid (Chiverrell *et al.* 2008; Hoffman *et al.* 2010). By looking at the water source availability at these sites today, it is hoped that we can have at least an idea of what the Late Bronze Age builders themselves would have had access to and how this could have influenced siting decisions made by them. This analysis fell into two areas; the proximity of the site to different water sources, and the type of water source. The proximity was worked out using Edina Digimap, looking at each individual site and measuring how far away it was from water using set distances. The types of water sources were then examined and are as follows:

- Spring
- Marsh
- Small pond
- Lake / mere
- Stream
- Minor river
- Major river

The percentage of hillfort sites with each individual type of water source was worked out and plotted on a bar chart. This was again done on all three levels – all data, regionally and by cluster.

2.4.3 Pre-existing ancient monuments

The last area of the landscape to be examined was whether Late Bronze Age hilltop sites were constructed on hills that already had pre-existing, older monuments on them. Again, Edina Digimap was used, and each site was examined to see if any of the following ancient monuments were present on the hills:

- Tumulus
- Cairn
- Long Barrow
- Causewayed Camp
- Earthwork

- Stone Circle
- Field System
- Hut Circle

Of course, by using an Ordnance Survey map, all that can be analysed is what appears on that map and anything that was quite obviously a later monument was ignored. However, there is a chance that some of what was recorded as ancient could have been built after the hilltop site itself was. Care was therefore taken over what was recorded, for example hut circles and earthworks were only recorded in areas, such as Dartmoor, where there is a reasonable chance that it is Bronze Age or earlier in date. Tumulus and Cairn are quite probably the same type of monument (Johnston 2013), however they were recorded separately here. There will also be those sites that have archaeologically excavated evidence of older usage, such as South Cadbury, Somerset (Alcock 1972; 1980) which has Neolithic pits present on the hilltop, but where these earlier monuments would probably not have been above ground and therefore not obvious in the Late Bronze Age. As the aim was to look at the obvious monuments that the Late Bronze Age communities would have been able to see and reference, the type of ancient monument recorded was restricted to those that appear above ground and recorded on the Ordnance Survey map. This does raise an interesting question as to whether these societies retained a cultural memory of these much earlier, 'invisible' sites, however, although no doubt a fascinating topic, this question falls outside the remit of this work. Analysis of the data was carried out by using the percentage of hillforts with ancient monuments by region and by cluster, as well the type of monument by region and cluster.

Once the Landscape had been analysed, the Climate chapter of this thesis considers the climatic conditions that prevailed during the Late Bronze Age, as there is an increasing amount of evidence for deteriorating climatic conditions during this time (Charmin *et al*. 2009; Dark 2006; Davies *et al.* 2003; Kilian *et al*. 1995; Macklin *et al.* 2005; Plunkett 2006) In establishing context for the study of Late Bronze Age hilltop sites it is important to understand the climatic conditions prevalent at the time. The chapter consists of an analysis of published data available concerning climatic change and deterioration during the Late Bronze Age in Britain, and an examination of how this may have affected communities living with its effects.

2.5 SETTLEMENT CHAPTER METHODOLOGY

Chapter Five, entitled *Settling Late Bronze Age hilltop sites* deals with all evidence for settlement present on these sites along with that found at non-hilltop sites, to try and identify whether patterns could be discerned within each group. This evidence was gleaned from a number of different sources; excavation reports (both published, and where possible, those in the grey literature), academic publications and the journals of local archaeological societies, which proved to be good sources of evidence along with the catalogues of national collections. Once all the evidence had been collated, it was broken down into five areas to be analysed – enclosure, structures, occupation, craftworking and agriculture. First, buildings on hilltops was examined, which looked at the physical evidence for both enclosure and structures present at hilltop and non-hilltop sites. This incorporated all evidence for buildings on these sites, including palisades, ramparts, roundhouses and other structures. Following

that, evidence for people actually living and working on these sites was examined – occupation, craftworking and agriculture. These were compared to the non-hilltop settlement sites, to try and ascertain settlement patterns on hilltops and non-hilltop sites, and whether the sites were being used for different purposes from the occupational and craftworking evidence that was discovered there.

2.6 MATERIAL CULTURE CHAPTER METHODOLOGY

The final data driven chapter discusses inhabiting the hilltop sites – how material culture could inform us about the activities that were occurring on these sites during the Late Bronze Age. The evidence for this was taken from the same sources as the settlement chapter above and was again broken down into different areas to be examined. As the aim was to investigate the social drivers behind the construction and utilization of these hilltop sites, the uses that these material culture assemblages were put to the Late Bronze Age inhabitants of these sites was analysed rather than a typological examination of physical characteristics. The first of these was personal items – this was analysed by type, materials used in manufacturing and categories of usage. In essence, could any conclusions about the activities taking place on hilltop and non-hilltop sites be drawn from the personal items found there? Next, weaponry was examined in terms of what types of weapons were found where and the possible uses these weapons were being put to. The next category examined was tools – what types of tools were found, the percentages of both site types with individual tool types, and the industries that these tools could be used for. A special examination of axes was undertaken, as a number of interesting inferences could be made about where these were found. The final category examined was that of pottery. The ceramic assemblages of both hilltop and non-hilltop sites was examined, looking at evidence of interconnectivity between sites that these assemblages suggested. A limited Functional Ceramic Analysis was undertaken for hilltop sites that had a reasonably large ceramic assemblage, with five non-hilltop sites examined to see if differences in ceramic usage at the two site categories could be discerned.

2.7 CONCLUSION

The study of hillforts is a reasonably developed area of later prehistoric archaeology and therefore there are a number of useful methodologies available to aid the research presented here. However, the analysis being undertaken in this thesis is looking at Late Bronze Age hilltop enclosures, which as stated in the Introduction is a different class of monument. What this thesis is trying to ascertain, therefore, has not yet been undertaken for this specific geographical area and period of time. By constructing an original methodology, utilising the best methods from earlier research, it is hoped that this thesis can contribute to the ongoing investigation of why communities felt the necessity to start to enclose hilltop sites during the closing centuries of the Bronze Age.

CHAPTER THREE

CLIMATIC CHANGES IN LATE BRONZE AGE BRITAIN

The next two chapters of this thesis primarily deal with the environmental and landscape setting of Late Bronze Age hilltop sites in western Atlantic Britain. When trying to understand why a type of site developed at a certain time, it is necessary to understand the societal context within which these sites were being built; understanding both the climatic conditions and the landscape setting provides a deeper understanding of these circumstances. Chapter Three will examine the most recent research on Late Bronze Age climatic conditions and look at how this can inform an understanding of society at that time. One of the stated aims is to ascertain whether the climate affected communities prompting them to build hilltop enclosures – by understanding the most recent research into climate during the Late Bronze Age, it will be easier to situate these monuments within what was happening to communities during this transitional period.

3.1 The great climate debate – what was actually happening to the climate in the Late Bronze Age?

For a number of decades there has been much scholarly debate over the extent and severity of climatic deterioration at the end of the Late Bronze Age in Europe, and how this would have influenced the societies bearing the brunt of these changes. Evidence for this deterioration has come from many different sources; from palynological records (Dark 2006; Davies *et al*. 2003), the development of raised bogs (Charmin *et al*. 2009; Kilian *et al.* 1995), glacier dynamics (Holzhauser *et al*. 2005; Matthews *et al*. 2005; Wanner *et al*. 2008), the solar activity record (Mauquoy *et al.* 2004; Plunkett 2006; van Geel *et al*. 1998) and flooding records (Macklin *et al*. 2005). Whilst thoroughly evaluating this evidence, which is undoubtedly vital in the understanding of what was happening during this period, it is also necessary to understand the developments in archaeological theory on the subject which run parallel to the climatological investigations. By examining how current theories developed, this work will be more deeply imbedded into our knowledge of this formative period.

However, to be able to understand what happened at the end of the Bronze Age, it is first necessary to look at what had been happening to both the climate and settlement records immediately before this time. The climate of the Bronze Age is described in depth by Brown (2008) in the British Museum's review of the Bronze Age. He used a number of different proxy climate records, and his findings can be briefly detailed as follows: *c.* 2000 / 1800 BC – 1500 BC – a period of stability with a slight decrease in wetness that roughly coincided with the Early Bronze Age (2600-1600 BC), followed by a 200 / 300-year wetter spell during the Middle Bronze Age (1600-1200 BC) which concluded *c.* 1200 BC with a dry and warm phase. This ended in the Late Bronze Age (1250-750 BC) *c.* 800 BC, and it is this phase that will be discussed in depth in this chapter. Settlement archaeology mirrors these conditions to a certain extent. The earliest evidence for roundhouses in Britain dates to the Chalcolithic period *c.* 2500 BC, and they were fully established throughout Britain after *c.* 1800 BC (Pope 2015, 176). The Middle Bronze Age (mid second-millennium BC), shows a marked increase in settlement evidence, observed

in detail in south and east England due to the large amount of research conducted in these areas, although a thorough roundhouse chronology also exists for Scotland (Pope 2015; Roberts 2013). The Early Bronze Age had shown population's willingness to move into different landscapes, whereas the Middle Bronze Age became more settled, with the utilisation of both upland and lowland environments. Roundhouses dominated, generally arranged into small groups or scattered around field systems (Brück and Fokkens 2013). The Middle Bronze Age (roughly 1600-1200 BC) coincided with a mild climatic episode; benign conditions which enabled the easy exploitation of more upland areas (Brown 2008; Burgess 1985; Roberts 2013). One of the best-preserved Bronze Age landscapes can be seen in the upland area of Dartmoor. Here an unmatched visible Bronze Age landscape, an example of which is shown in Fig. 3.1, gives us insights into how these communities organised themselves (Brück and Fokken 2013, 96; Fleming 2007). What can be seen on Dartmoor, as well as in other places such as the Thames Valley (Yates 1999), is a system of land divisions, variously called 'co-axial', 'rectilinear', 'cohesive' or 'linear' field systems (Johnston 2013, 320). Fleming's study of Dartmoor's co-axial field boundaries has revealed that they create a series of discrete and coherent systems, some of which can be extremely large with examples enclosing up to 3,000 hectares (Fleming 2007; Johnston 2013, 320). Fleming believed that these land boundaries were all to do with the subdivision of the land rather than its enclosure – 'claiming and controlling land' (Fleming 2007, 189). Other theories as to their origins and purpose abound, from Yates's explanation of them as a result of the need to increase the production of food from the land to maintain systems of competitive exchange (Yates 2007) to Brück's theory that they were the result of the move within society from larger groups to smaller family units, with the field systems becoming a means of controlling the production of the household (Brück 2000; Johnston 2013, 322). The chronological evidence for these field systems throughout southern Britain shows that most were laid out between 1600 – 1150 BC (Johnston 2013, 322). Therefore, by the end of the Middle Bronze Age and the beginning of the Late Bronze Age, a system of working the land, operating in a time of relatively benign climatic conditions, had prevailed for hundreds of years. This sets the scene for the examination of the evidence of a change in the climatic conditions, and more importantly, the effects that these changes would have had on the communities involved.

Figure 3.1 – Bronze Age field systems on Mountsland Common, Dartmoor. (www.historicalengland.co.uk)

The end of the Bronze Age and beginning of the Iron Age was first accepted as a time of climatic deterioration in the early twentieth century as it roughly matched the Sub-Boreal/Sub Atlantic transition of the Blytt-Sernander scheme for the division of the Holocene in northern Europe; a transition from warm/dry to cool/wet conditions (Dark 2006; Sernander 1908). The role this climatic deterioration played in the development of ancient societies has been part of academic debate ever since. It was during the 1970s that theories of how the climate actually changed over time really began to come to the fore. At first, the belief was that climate altered slowly and gradually (Lamb 1977, 995), however, by the end of that decade this had been replaced by theories of more radical change. One of the first to champion this was Colin Burgess, whose 1979 article entitled *Catastrophe!* postulated that there had been a widespread collapse of societies in Britain during the 12th-11th centuries BC due to a catastrophic deterioration in the climate (Burgess 1979, 251). At the time his theories of Icelandic volcanoes disastrously affecting climatic systems, which in turn led to the collapse of society at the end of the Bronze Age 'drew a mixture of mirth and non-comprehension' from fellow archaeologists (Burgess 1989, 325). However, he was nothing if not persistent in his views. In 1980, he posited that during the Penard Period (*c.* 1200-1000 BC), there was a 'widespread collapse of existing political, social and economic systems' (Burgess 1980, 155-9). He published further works on the subject in 1984, 1985 and 1989, strong in the belief that 'since population disasters are well known in British history, we should expect them in prehistory' (Burgess 1985, 195).

He was not alone in this view. At about this time, Mike Baillie tentatively postulated the eruption of the Icelandic volcano Hekla 3 might have been responsible for the collapse of societies from Britain to the Aegean towards the end of the Bronze Age (Baillie 1989, 311). As he himself noted, his views were not supported by many other academics. One of the most vocal of his opponents was Robert Young - he strongly disagreed with Burgess's ideas, and their theoretical sparring lasted throughout the 1980s and

1990s. His contention was that there was little evidence for Burgess's idea that there had been a population collapse which had led to the widespread abandonment of the uplands at the end of the Bronze Age (Young and Simmonds 1995). Whilst he acknowledged that there had been climatic changes during this time, his assertion was that 'Burgess's use of radiocarbon dates is selective and that (as with the pollen data) the available dates do not substantiate his case' (Young and Simmonds 1999, 208). He had looked at the Scottish Border regions in detail and concluded that the changes in settlement patterns which ultimately led to the creation of palisaded enclosures, which Burgess believed to be a crisis response to a collapse in society, 'might well be seen as the response of social groups with a well-developed sense of 'place' to changes in the material conditions of their existence' (*ibid.* 1999, 209). Young used the work of numerous academics (Gates 1983; Higham 1986: Jobey 1985; Topping 1989) to back up his conclusion that there was little veracity in Burgess's view of the Late Bronze Age as a time of catastrophe and settlement collapse.

Work done in various fields since the 1980s however, had begun to show that although his dating and conclusions might have been erroneous, Burgess's basic premise of a widespread deterioration in the climate that could have had an effect on communities at the end of the Late Bronze Age is probably essentially correct. The dating of this phenomenon has now moved from Burgess's 12th-11th centuries BC, to roughly 850 BC (Berglund 2003; Charmin 2010; Dark 2006; Kilian *et al*. 1995; van Geel *et al*. 1998). The scope and area for this climatic deterioration has also vastly increased, as it is now not seen as just an essentially British phenomenon, or even a northwest European one, indeed it is being postulated as a much more extensive occurrence than previously believed.

Whilst the effects can be clearly seen within the British archaeological record, climatic deterioration at the end of the Late Bronze Age has also been recognised as affecting a more far-reaching area. The evidence for rapidly increased development of raised bogs in Ireland and the Netherlands show the impact of progressively wet conditions (Turney *et al*. 2006; van Geel *et al.* 1998). Further afield, it has been suggested the effects of this climatic deterioration can be seen as one of the major reasons for the expansion of the Scythian culture out of the Altai region of central Asia around 850 BC (van Geel *et al.* 2004, 1735). It has even been suggested by van Geel (*et al.* 2000) that this same climatic event could have been responsible for the related weakening of the monsoon and the beginning of dryer conditions in tropical Africa at this time (Wanner *et al.* 2008). However, it is worth remembering that van Geel is a climatologist and not an archaeologist. Whilst the science of his work and others into ancient climate change is of vast importance, the archaeological conclusions should be treated with caution. There is a danger within the discussion of the effects of ancient climate change on societies for archaeologists and climatologists to stray into each other's area of expertise. This leads to a certain degree of academically blurred lines, which need to be unpicked if we are going to try to get as close to what happened as possible. However, this climatic change is steadily beginning to be shown as a seminal event in the development of societies across huge areas of the globe at this time. The next section will look at recent scientific work examining the evidence for this climatic deterioration and the most recent theories of how the climate might have affected communities in Britain which may in turn have played a part in the development of hilltop sites at the end of the Bronze Age.

3.1.1 The Peat Bog, Palynological and Flooding Records

> 'One of the reasons for placing a considerable amount of faith in these climatic reconstructions is the correlation between them and a vast array of other proxies.'
>
> (Brown 2008, 7)

The quote above illustrates the interconnectivity of the various climatic reconstructions that will be detailed below which together build up a picture of the climatic conditions prevalent at the end of the Bronze Age. The use of peat bog records as a method of reconstructing paleoclimates is of particular value in northern temperate latitudes. The main peat-forming plants in these latitudes are bog-mosses, in particular from the genus *sphagnum*. These bog-mosses, along with sedges and heathers, are particularly sensitive to increases and decreases in the water table due to changes in precipitation levels, and the corresponding wetter and drier phases can be identified from cores taken from these mires (Barber *et al*. 2003, 521-522). This peat stratigraphy can then be used as a proxy climate record by macrofossil analysis using a variety of methods such as the analysis of pollen, spores and macro- and microscopic remains of fungi, algae, cormophytes and animals; and also includes radiocarbon dating (Dark 2006; van Geel 1978, 1). From this a reconstruction of the vegetation at any given time results in a profile of the changes in the bog surface wetness (BSW), which in turn shows phases of wetter and drier conditions from which climate change can be identified (Barber *et al*. 2003, 521; Brown 2008, 8). There have been a number of studies conducted at various bogs in Britain and Europe over the past 40 years that have started to build a comprehensive picture of past climate change (Aaby 1976; Barber *et al.* 2003; Blaauw *et al.* 2004; Charmin *et al.* 2009; Chiverrell 2001; Ellis and Tallis 2000; Gearey *et al*. 2000; Langdon *et al.* 2001; Mauquoy and Barber 1999a, 1999b; Wimble 1986;). These studies have begun to demonstrate a number of discrete climatic change events that can be seen in bogs and mires all over Britain and Europe, of which Brown acknowledges 'a large degree of agreement in relation to the major trends' (Brown 2008, 8).

The one event that concerns this thesis centres on the Late Bronze Age at approximately 850 BC. Table 3.1 illustrates examples of locations of raised bogs throughout NW Europe that have been studied and which all show a general consensus towards a shift to wetter conditions around 850 BC. These studies used a variety of analysis, including radiocarbon dating, to demonstrate that a Late Bronze Age climatic change led to a growth of blanket bog at that time, and all show an element of agreement in their findings. However, not all the evidence from raised bogs overwhelmingly supports the theory of a shift to wet conditions *c*. 850 BC. A study of nine Irish bogs conducted by Plunkett (2006) and Swindles *et al.* (2007), using testate amoebae and peat humification showed that there had been a substantial lull between the drop in solar activity at *c*. 850 BC and the increase in the wet phase of these raised bogs at *c*. 740 BC. This has implied a time lag of 110 years between the change in solar activity and the growth of raised bogs due to increased wetness (Mauquoy *et al.* 2008, 755). Another study (Amesbury *et al.* 2007), this time on Dartmoor, looked again at testate amoebae and peat humification from Tor Royal Bog in central Dartmoor. It did find a shift to cooler and wetter conditions occurring, but not at 850 BC, but earlier, between *c*. 1395-1155 *cal* BC. (Amesbury *et al.* 2007). So, whilst not all the studies agree on the *c.* 850 BC date, the vast majority do. This has led Brown to describe the increase of BSW

seen all over Europe at this time as suggesting 'probably the most profound climatic shift of the Holocene prior to the Little Ice Age' (Brown 2008, 8). This in itself is highly suggestive of some sort of climatic deterioration but will need to be supported by other types of both global and regional evidence. It is also essential to keep a regional focus whilst looking at these studies conducted on a larger scale. Large-scale studies can suggest trends occurring on a smaller scale, but this does need to be backed up by work done within that regional area.

Location	Date	Study
Kentra Moss, NW Scotland	*c.* 875 *cal* BC	Ellis & Tallis 2000
White Moss South, Cumbria	*c.* 800 *cal* BC	Wimble 1986
20 bogs from north and central Norway	*c.* 850 *cal* BC	Nilsson & Vorren 1991
Dravid Mose, Denmark	*c.* 848 *cal* BC	Aaby 1976
Mongon Bog, Ireland	*c.* 850 *cal* BC	Barber *et al.* 2003
Engbertsdijksvenen, The Netherlands	*c.* 862-784 *cal* BC	van Geel & Dallmeijer 1986; Blaauw *et al.* 2004
Abbeyknockmoy Bog, Ireland	*c.* 899 *cal* BC	Barber *et al.* 2003
Bryn y Castell, N Wales	*c.* 911-805 *cal* BC	Mighall & Chambers 1995

Table 3.1 – Location of bogs where a shift to wetter climatic conditions have been identified *c.* 850 BC. Modified from Barber *et al.* (2003) to include data from a number of different studies.

A study carried out by Macklin *et al.* (2005), examined ^{14}C dated Holocene fluvial deposits from the whole of the United Kingdom, with the aim of reconstructing extreme flooding events. This showed several episodes of extreme flooding that coincided with high atmospheric ^{14}C production rates, which has been shown to be an indicator of climatic shift towards colder, wetter conditions. One of these episodes, *c.* 2730 cal BP (*c.* 780BC), broadly coincides with the existing evidence for a deterioration in climate during the Late Bronze Age, with increased flooding a result of the increased precipitation occurring at this time (Macklin *et al.* 2005). This increased precipitation, which will have resulted in flooding in riverine locations, would also have been responsible for the increased development of blanket bogs already seen taking place in other locations. Johnstone *et al*. (2006) identified this same flooding event in *c.* 2730 cal BP (c. 780 BC), as well as a number of others, as corresponding to both a period of high atmospheric ^{14}C production rates, indicative of phases of low solar activity, and increased North Atlantic ice-raft debris events. This marine record indicates periods when cool, ice bearing water from beyond Iceland drifted as far south as the UK, and this implies that this same *c.* 2730 cal BP (*c.* 780 BC) flooding event coincides with an episode of cold ocean surface temperature (Bond *et al.* 1997; 2001; Johnstone *et al.* 2006, 21). A summary of the BSW and alluvial records for the British Bronze Age (Table 3.2) has the Late Bronze Age event shaded. Taken together, the BSW, palynological and flooding records are strongly indicative of a deteriorating climatic event taking place towards the end of the Bronze Age. However, more evidence for this event is coming from recent work in other areas of palaeoclimatological investigation, which further strengthens the case for climate change at this time.

Approximate Period BC	Bog Record (BSW)	Alluvial Record
2300 - 2000	Cold / wet phase (4.2 ka event)	High activity
2000-1800/1500	Reduction in BSW	Low activity
1800/1500 - 1200	Increase in BSW	
1200 - 850	Warm / dry phase	
850 – 650/550	Cold / wet phase (2.7 ka event)	Sharp rise in activity
650/550 - 400	Reduction in BSW	Fall in activity but to levels higher than previous low activity period

Table 3.2 – A summary of Bronze Age climatic trends derived from bogs and the alluvial record for Britain from sources referenced in the text (Brown 2008, 12).

3.1.2 Recent Palaeoclimatological Studies

Various studies by paleoclimatologists in recent years have used diverse methods to examine the changes in the climate occurring at this time. One of these approaches, championed by Dutch palaeoclimatologist Bas van Geel, is the study of atmospheric ^{14}C levels. As alluded to in the section above, a rise in atmospheric ^{14}C occurred at roughly the same time as the abrupt climatic shift from the sub-Boreal to the sub-Atlantic, named the 2.7 ka event by Brown, and has been demonstrated as happening at around *c*. 850 BC (van Geel and Mook 1989; van Geel *et al.* 1996; van Geel *et al.* 1998; van Geel *et al.* 2000; Wanner *et al.* 2008). A decrease in the solar activity of ca 1 W/m^2, which has been attributed to a related increase in cosmic ray flux, is postulated to have led to an increase in cloud formation, a lessening in solar UV intensity, a decrease of ozone formation and an associated reduction in the absorption of sunlight in the stratosphere (van Geel *et al.* 1998, 165; Wanner *et al.* 2008, 1801). This ground-breaking work by both van Geel and Wanner, published in respected journals such as Quaternary Science Review and the Journal of Archaeological Science, has led to the general conclusion that this change in solar activity was the forcing mechanism behind the climatic changes seen globally at this time. Brown sees a large amount of agreement between the work of all these paleaoclimatologists, with any variations being due to differences in dating, site sensitivity and regional variations; 'taking the major studies together, it can be seen that there is a large degree of agreement in relation to the major trends' (Brown 2008, 8).

Studies into the dynamics of various glaciers have shown advances happening more or less simultaneously worldwide between *c*. 3000-2300 cal years BP (1050– 350 BC) (Wanner *et al*. 2008). Table 3.3 below shows the location of advancing glaciers at this time and this increase in global advancement of glaciers has been attributed to the decrease in solar activity outlined above. However, the dating accuracy of these episodes is much more limited, and it is therefore difficult to assess whether these events were happening simultaneously or not (Wanner *et al.* 2008, 1801). A study in 2015, published in the Quaternary Science Review reviewed all the available evidence from all over the globe for Holocene glacial fluctuations. The authors rated the evidence from central Europe and Scandinavia as the most reliable, and both areas saw a marked advance of glaciers during the period 3.0 – 2.6 ka, which roughly corresponds with the Late Bronze Age period and the beginning of the Early Iron Age (Solomina *et al*. 2015). Therefore, what can be said is that an increase in glacial activity, indicating a colder, wetter period, does broadly correspond with the climatic deterioration that evidently took place

during the Late Bronze Age/Early Iron Age, and may therefore been seen as an indicator of the same climatic event. As archaeologists we have to keep up to date with progresses in climatology, however our aim is not to examine the minutiae of the mechanisms behind climate change. Rather, it is to investigate whether the episodes of social change that we are beginning to see in the archaeological record might be reflected in the evidence for the prevailing climate of the time. By bringing together these two strands of evidence we can start to put together and test hypotheses for what might have been happening within the societies of the Late Bronze Age.

The study of the proxy-climate records using all the methods outlined above to reconstruct past climates has been building up a corpus of evidence for a change in the environment to colder and wetter conditions at around 850 BC. Whilst a few studies, such as the those looking at Irish bog formation (Plunkett 2006; Swindles *et al.* 2007) together with Amesbury *et al.*'s (2007) examination of Tor Royal Bog on Dartmoor disagreed with the rough dating of *c.* 850 BC, nevertheless, the overwhelming evidence developing at this time from a wide range of different scientific methodologies is of a dramatic increase in surface wetness and a decrease in temperature occurring at around 850 BC. Such an event might well have had considerable consequences for the populations of these areas at that time. It is therefore essential to follow the evidence presented by these various studies to investigate what might have been happening within these populations and whether the climatic challenges stimulated changes within them.

Location	Date	Study
Swiss Alps	Between 3000-2600 *cal.* years BP	Holzhauser *et al*. 2005
Norway	Culminating at 2750 *cal.* years BP	Matthews *et al*. 2005
Western North America Cordillera	Between 2900-2300 *cal.* years BP	Koch and Clague 2006
Patagonia	2900-1950 *cal*. years BP	Mercer 1982
Northern Chile	After 2800 *cal.* years BP	Grosjean *et al.* 1998

Table 3.3 – Location of advancing glaciers centred around 2750 *cal*. years BP (800 BC). Modified from Wanner *et al.* 2008.

3.1.3 Potential limitations of climatic studies

Whilst the evidence outlined above undoubtably demonstrates that there is a growing body of evidence for a deterioration in climatic conditions towards the end of the Late Bronze Age, it is, however, important to remember that there are other factors that can influence changes to local environmental conditions. Anthropogenic actions such as deforestation and agricultural practices can eventually lead to peat development. Huckerby *et al.*'s (2011) investigation into the archaeology of areas of upland peat in NW England found that peat inception could follow periods of woodland mor-humus development that was related to anthropogenic clearance and burning activities not connected to climatic changes, demonstrated at Anglezarke Moor in the west Pennines (*ibid.* 114). It is also true that in some locations, peat development was not a directly linear result of climatic change, but was caused by the interplay of a number of different factors. White Moss in the Forest of Bowland is topographically located in a col, an area where water naturally collects, and the earliest blanket peat only started developing here when

a shift to warmer and wetter conditions took place in the Atlantic Period (which commenced *c.* 5500 BC) coupled with the loss of tree cover through anthropogenic activity (*ibid*. 113). It took all three factors (topography, climate and human activity) to be present for the conditions to be right for the peat to develop. Whilst these examples are both dated to the Neolithic, it is only because there is a lack of comparable work done in the uplands of case study areas examined in this thesis that these intertwined factors have not yet been demonstrated as also occurring in the Late Bronze Age in these areas. Human activity can also affect the availability of evidence for study in different locations. In places, peat cutting has removed at least 2m of peat, whilst the effects of foot-traffic in upland areas popular with walkers can also have a negative effect in trying to get as clear as possible picture of the process of peat development in these locations (*ibid*. 115). This in turn affects the ability of archaeologists to create as full as possible a picture of the reasons behind peat development in these areas.

The more paleoclimatic data is interrogated, it is becoming clearer that changes in the climate affects different regions, and indeed different specific locations within these regions in different ways, to different extents and at different times. The work done by Huckerby *et al.* (2011) has shown that even within limited geographical regions, the onset of peat formation could be hundreds, even thousands of years apart, and be the result of different contributing factors. The evidence outlined so far in this chapter has shown that in general, there is a consensus amongst climate change specialists that there were widespread climatic changes that affected the environmental conditions during the Late Bronze Age. However, it is also true to say that very little work has actually been done in my case study areas, as examples cited here come from diverse locations as NE Scotland, Ireland, the Netherlands and Scandinavia. Whilst these are useful comparisons, and do constructively inform the argument, it is not until good quality data is available for interrogation for the regions analysed in this thesis that more concrete conclusions will be able to be drawn as to what part climatic deterioration played in the changes seen within society in the Late Bronze Age.

3.2 CLIMATE CHANGE AND IT'S EFFECT ON LATE BRONZE AGE SOCIETY

> 'It is necessary to at least postulate the mechanisms by which a climatic change results in cultural actions.'
>
> (Brown 2008, 13)

The relationships that exist between human populations, the land on which they live and the environment in which they exist is a hugely complex one, as demonstrated in the section above. The land is exploited to provide enough resources in return for the effort expended; 'communities invariably identify those areas of land that will best serve the subsistence needs of the groups in light of existing cultural knowledge, in terms of varied maintenance strategies and the available technologies' (Young and Simmonds 1999, 203). It seems logical that when these conditions become more challenging, this will in turn affect what land is used, and that there comes a point when their exploitation costs more in time and effort than is warranted by what is achieved. However, ethnological studies have shown that this is not always so (Li 2005, 2; McClusker and Carr 2006; Roncoli 2006). The land is not a neutral part of the equation, but instead is imbued with a resonance of its own. It is not just a passive

consumable to be exploited for what it can produce, but it 'is used in an active way to demonstrate identities, construct metaphors and articulate power' (Evans 2003, 14). As already seen, during the good climatic conditions of the Early and Middle Bronze Age, upland areas of Britain such as Dartmoor had been successfully cultivated for generations. These upland areas have been described as being on the margin as they are at altitudes that, whilst successfully farmed during benign conditions, would prove problematic if these conditions deteriorated (Bradley 2007, 183; Roberts 2013, 538). Marginality in the ecological and environmental sense, is an area defined by the distribution of species within the landscape. Marginal conditions occur when a plant or animal species moves towards the threshold of a habitat or environment where its efficacious reproduction is possible. Past this threshold, these species would not be able to either ripen or find enough food to survive (Young and Simmonds 1999, 199). However, it is more nuanced than that: marginality can also be defined in terms of environmental, economic, political and cultural viewpoints (Coles 1998; Green 2005; Walsh and Mocci 2003; Walsh 2008, 550). Therefore, during the Middle Bronze Age these uplands were not marginal land, but with the climatic deterioration seen in the Late Bronze Age, they could be seen as moving towards marginality.

The central question now is this; would a move towards marginality dictated by a deterioration in the weather necessarily lead to an abandonment of this land as it becomes more difficult and less productive to exploit? If so, how would these changes manifest themselves within these communities, and would these changes be seen within the archaeological record? In terms of pure efficiency, in looking for the best return for the expenditure of effort concerned, one would reasonably expect this marginal land to be used far less intensively during this period as opposed to the previous one. However, as we have seen, the use of land by communities is not just an exercise in efficiency, but that 'the continued use of an increasingly less productive environment may be indicative of the 'maintenance of tradition', or maybe a manifestation of a group's increased sense of attachment to a particular locale' (Young and Simmonds 1999, 199). The effects of this climatic deterioration might take generations to be fully appreciated by the communities involved, and the initial response could well be one of 'digging in', to keep hold of the land that had been used by their ancestors for hundreds of years (Evans 2003; Young and Simmonds 1999). It is also worth noting that there may not have been new areas for communities to move into without considerable opposition, and therefore they needed to dig in and make the best of the land that they already had. Whatever the exact cause, it would have been a combination of both socio-economic and environmental factors that led to the change from upland to lowland settlement at this time (Gearey *et al*. 2000, 503).

Many academics have written about the fear of appearing to support environmental determinism, the theory that the physical environment affects the ways in which particular societies and civilisations develop (Barber *et al*. 2003; Coombs and Barber 2005, 303; Roberts 2008; Tanner *et al.* 2003). It is this fear that has led many to be 'either dismissive or hesitant to approach such an issue' (Roberts 2008, 51). There are also difficulties, seen from ethnological examples, of reconstructing how a particular society viewed their landscape. A good example is Late Medieval Greenland; this was an extremely marginal land for the Norse agropastoralists, but to the Inuit also inhabiting this landscape, it was an extremely rich environment (Coombs and Barber 2005; McGovern 1994). It is therefore

essential to avoid sweeping generalities 'assigning climatic causality to cultural changes' (Brown 2008, 14) and whilst it is true that the effect of climate change will be different on local, regional and national scales, indeed some communities might well have benefitted whilst other did not (Tipping *et al*. 2012, 16), there is an increasing amount of evidence for social change coming to light from right across Britain from this time. It is also true to say that anthropogenic factors can also lead to deterioration in agricultural potential of the land communities worked. This could be through soil exhaustion, erosion caused by ploughing, deforestation or over-grazing (S. Stallibrass pers. comm. 2021). So, it is perfectly possible that agricultural practices would have had to change irrespective of the climatic conditions.

Tipping *et al.* (2008) looked at pollen analytical evidence from upland and lowland sites in NE Scotland during the Late Bronze Age. They showed that a change in agricultural practices took place, with a cessation or at least marked decline in barley cultivation occurring at a number of sites at approximately the same time; Loch Farley *c*. 2700 *cal.* BP (750 BC); Achany Glen *c*. 2900 *cal.* BP (950 BC) and western Glen Affric *c*. 2860 *cal.* BP (910 BC) (Tipping *et al*. 2008, 2384). This is significant as barley is actually one of the least demanding arable crops and would have been slightly more able to withstand changes than many others, most notably wheat. He concludes that this was probably not a full-scale abandonment of the upland areas, but more a change of usage. Barley cultivation became too high risk through repeated failures, so the land was used instead for grazing (Tipping *et al*. 2008, 2384), illustrating the point that although the land had become unviable for arable crops, it was still important to the communities involved. They did not abandon it, just changed its usage to one more suited to the prevailing conditions. This is an interesting study, as it shows that communities would be willing to change the use of the land rather than abandon it, they adapted rather than leave their ancestral lands. However, it needs to be backed up with a study of the settlement patterns at this time to be of real use in looking at whether the Late Bronze Age climatic deterioration could have had a serious enough effect on the communities involved to bring about the changes within the society that can be seen in the archaeological record, such as the development of hilltop sites at this time.

A study of Bronze Age roundhouse traditions in Scotland conducted by Pope (2015) has shown that the actual size of houses in upland areas can be seen to be decreasing at this time. In the Early Bronze Age (2000-1400 BC), the average floor area of dated roundhouses was 78 sq. m, and this had dropped to 40 sq. m by the Late Bronze Age (1000-800 BC) (Fig. 3.2). She has also demonstrated that during the Late Bronze Age there is a period of disruption in the settlement record after 850 BC. This begins in the western mainland, with the last upland date at Balloch Hill H2 being *c*. 800 BC, with a decline in the eastern uplands showing in the settlement record by *c*. 750 BC at Eildon Hill North H3. A move from the upland to lowland areas took place during this time, with the greatest impact being seen in the west (Pope 2015, 179); this work supports that of Tipping above. He has shown that arable farming diminished in the upland areas, presumably moving away from the ecologically more marginal areas of the uplands, to the more viable agricultural areas of the lowlands. It would be necessary for agriculturalists to live in closer proximity to their arable crop as this is much more labour intensive than the grazing of livestock, which the settlement evidence from Pope brilliantly illustrates. The move of settlements from the Scottish upland area broadly coincides with the chronology of Tipping's cessation of barley production in the same area. Therefore, it is my view that there is a causal link between the

two in this region. The changes in agricultural practices with the decline of barley cultivation in the uplands and the move to using this land for grazing, coupled with the settlement evidence showing both a reduction in the size of roundhouses and a move from the upland to the lowlands, shows strong evidence that societies in this region were reacting to some external factor that made them change agricultural and settlement patterns that they had been following for hundreds of years.

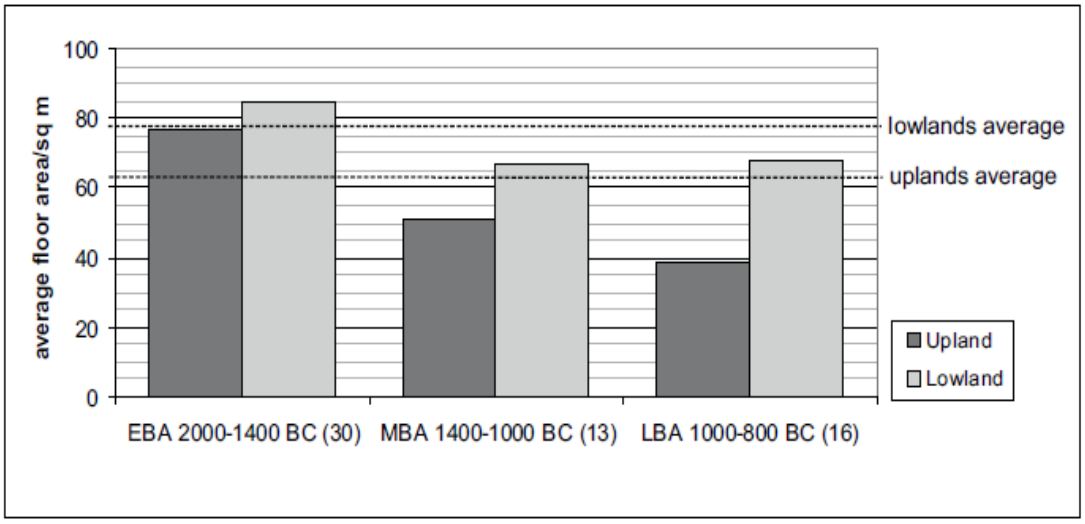


Figure 3.2 – Average floor area of dated roundhouses in the Bronze Age north (n = 59). (Pope 2015, 177)

It is important to stress that there are regional variations to studies that show a different pattern. In the Netherlands van Geel has sought, through a number of different investigations, to show that an abrupt deterioration in the climate and an increase in the water table *c*. 850 BC led to population displacement and a shift away from established farmland (Tipping *et al*. 2012; van Geel *et al*. 1996; van Geel *et al*. 1998). What is significant here is that he argues it was the lowland populations that were more at risk from the increase in the water table, and it was they who bore the brunt of the effects of climate change (van Geel *et al*. 1996). This is the opposite of what is being seen in Scotland with Tipping *et al*. (2008) and Pope (2015). Low lying land can always be more prone to flooding and waterlogging, although the nutrients brought in by flood waters can also result in lush seasonal pastures during the summer months. It is the sustained flooding in lowland areas, seen in the Netherlands *c*. 850 BC that creates problems for communities living in these areas. However, both these cases (Scotland and the Netherlands) could be a local response to the same or similar climatic deterioration, that it had a direct impact on the populations living within those areas.

However, not all academics agree that a climatic deterioration at around 850 BC caused major changes to society resulting in land abandonment, changes in land usage or widespread population displacement. Dark (2006) looked at a series of 75 pollen sequences from the Late Bronze Age and Early Iron Age across Britain to ascertain whether climatic deterioration was responsible for land abandonment. She sought to see if it was just the more marginal sites which were affected, those which would either be at more danger from flooding or, due to their altitude, were more at risk with a shift to colder, wetter conditions. Whilst she acknowledged that there was undoubtedly evidence for a climatic

deterioration during the Late Bronze Age, her conclusion was that it was probably not responsible for any significant land abandonment. She saw no evidence for the widespread abandonment of upland areas, indeed, she concluded that the land use of most areas continued largely unchanged. She did, however, find some evidence of regionality, with a greater abandonment of upland areas of Wales noted (*ibid.*). It must be said, however, that there is a regional bias, acknowledged within the study, towards the north and west of Britain as it is these regions that have significantly more pollen bearing deposits studied. Whilst this is undoubtedly an important study which throws up some interesting results, there are areas where the interpretation is open to discussion. As she herself recognised, there are difficulties in using pollen analysis to distinguish when there are shifts between arable agriculture and pastoralism, and the extent of these changes. It may be that what looks like an upland area that is being cleared of woodland for increased arable farming, may in fact be a stress response to the situation necessitating an ever increasing need to bring more land into cultivation, or be cleared for pastoral activities. This may be an indication that the climate deterioration is having a negative effect on the local populations. Therefore, whilst she sees no evidence for any significant land abandonment, it may not be finely tuned enough to see when the continued use of the land is being negatively affected by prevailing conditions. The dovetailing of both agriculture and settlement records, so well-illustrated in Scotland by Tipping and Pope is, in my opinion, a much better indicator of the climate directly affecting communities.

In a boldly entitled article *Rapid climate change did not cause population collapse at the end of the European Bronze Age* Armit *et al.* (2014) argued that through an in-depth examination of precisely dated Irish peat bogs, it could be shown that the population decline began at least 100 years before the climatic deterioration started. The study used tephra layers from the widely available peat bogs in Ireland to create 'precise dating and correlation enabling the creation of robust terrestrial climate histories' (*ibid*. 17045). The authors also took advantage of the wealth of archaeological data thrown up by the Celtic Tiger economic upsurge that occurred between 1995 – 2008. The team examined 2,023 radiocarbon dates spanning the period 1200 *cal.* BC to *cal.* AD 400. His study showed that the peak of farming in Bronze Age Ireland occurred during the late eleventh century BC, and by the late ninth and early eighth centuries BC there was significant decline in farming evidence. He then analysed proxy climate data and archaeological data, which showed that the climatic shift occurred between 800-750 *cal.* BC, stating that 'the decline can be categorically disassociated with the climate downturn' (*ibid*. 17046). Whilst his article did not go into too much detail as to why this population decline began a century before the climatic decline, he did state that he saw it as a result of the social destabilization due to the introduction of iron technologies which made redundant the long-established bronze networks (*ibid.*). Whilst this is a comprehensive study of the climate and archaeological evidence pertaining to Ireland in the Late Bronze Age, it poses more questions than it answers. By showing that changes in the environment and climate occurred some time after farming practices had changed, it formed the basis for others to investigate what other factors could have potentially influenced these agricultural changes. This gap was filled by Gearey *et al.*'s (2020) examination of the evidence for climate change, the archaeological records and human activity during the Bronze Age – Iron Age transition in Ireland. One interesting area they looked at was how apparent dry phases seen in the BSW record at Lisheen Bog, Co. Tipperary at *c.* 1250 BC, 750 BC and 600 BC could in fact have been the signals of events called 'bog bursts' – 'the catastrophic structural failure of an area of peatland, driven

by excessive hydrological recharge' (Gearey *et al.* 2020, 12). Studies of modern bog burst events have shown that they can be the result of episodes of long-sustained rainfall, and there is even the suggestion of a causal link between local bog hydrology and archaeological site building. At Kilnagarnagh, Co. Offaly a wooden trackway was built *c.* 960-940 BC after a bog burst *c*. 1000 BC resulted in the drainage of a 'bog lake' causing local drier conditions. This change to the local environmental condition then appeared to stimulate a social reason for crossing this peatland necessitating the construction of the trackway (Gearey *et al.* 2020, 13-14). This article goes some way in linking changes seen in the palaeoclimatic records with those in archaeological and palaeoecological ones, but acknowledges much work needs to be done to refine the chronology of such events.

3.3 DISCUSSION

What has been clearly demonstrated in this examination of the evidence for climate change at the end of the Bronze Age and its effects on the human communities at the time, is that there has been much work done in this area in the last few decades that have led to some really interesting theories. Tantalising evidence does indeed suggest that climate change could have adversely affected human populations. However, paleoenvironmental proxy indicators can indicate changes in the environment that may or may not be directly linked to changes in climate. Very few of these proxies are exclusively climate-influenced, and some may also be caused by anthropogenic factors. Deforestation, ditch digging, and irrigation can all local changes in wetness, and often local factors can be more important to a specific landscape than global climatic changes (S. Stallibrass pers. comm. 2021)

However, these changes were probably not in terms of wholesale collapse, as Burgess suggests, but more about a re-organisation of farming and settlement practices as proposed by Tipping and Pope amongst others. What is needed going forward is to bring together in-depth contextual studies by both archaeologists and paleoclimatologists. A fine-grained analysis of the climate proxy records together with a wide-ranging investigation of settlement evidence, paying particular attention to creating as accurate a chronology as possible, may well begin to show where these two strands of enquiry match. From this, it may be able to build a model of what was happening within communities at this time which will demonstrate if and how climate influenced human practices. However, what has been shown here is that there is real evidence for climate change in this period. From around 850 BC, a myriad of studies has shown that a climatic downturn to colder, wetter conditions took place. There is tentative evidence that this climatic deterioration may have affected the settlement and agricultural patterns of populations living within my study area.

How then does this impact on this study of Late Bronze Age hilltop sites in the Atlantic west? It forms the background into which the evidence for the creation of these hilltop sites will be placed, which will be examined at all times in the knowledge of how the climatic conditions of the time may have been influencing the decisions made by these societies to build these monuments. Whilst detailed climatic studies have only taken place within one part of my study area, namely Dartmoor, similar work done in other areas of Britain can still positively inform the debate by providing useful comparisons. However, it is also obviously true that the conclusions drawn within this work would be greatly strengthened by

the detailed analysis of how the climatic, topographical and anthropogenic factors within these study areas influenced the environmental conditions that may have driven the creation of these hilltop enclosures. This is, however, a highly specialised investigation beyond the scope of this study.

CHAPTER FOUR

LOCATING LATE BRONZE AGE HILLTOP SITES

To be able to understand the origins of Late Bronze Age hilltop sites, it is first necessary to understand the environment in which they developed and the landscape in which they sat. The climatic conditions prevailing at the time has been covered in Chapter Three, Chapter Four will examine the landscape setting of these sites. The hills on which these hilltop sites sat had been utilised by local communities for generations; evidence for this can be seen from Mesolithic flint assemblages and Neolithic causewayed enclosures, both seen at Hambledon Hill, Dorset (Mercer and Healy 2008) through to Bronze Age round barrows which are found at many hillforts such as Castle An Dinas, Cornwall (Thurley and Preston-Jones 1990; Wailes 1963). The existence of structures called hillforts have been described as occasionally occurring at a much earlier chronological period, for example Carn Brae, Cornwall has been described as a Neolithic hillfort (Ralston 2007), and at Orsett Neolithic Causewayed Enclosure, Essex, a palisade was discovered just inside the ditch that ran around the site, making it superficially resemble a hillfort (Hedges *et al.* 1978; Whittle et *al*. 2011). Therefore, although previous communities may have experimented with structures similar to hillforts, it seems that something developed within the societies of the Late Bronze Age that pushed these communities into the more widespread construction of these substantial monuments on their hills. Thorpe (2013) says 'in Britain it is now well established that the earliest hillforts are of Bronze Age date', with chronologies pushing the building of hilltop sites back into the Late Bronze Age being well established at sites such as The Breiddin, Powys (Musson 1991) and Beeston Castle, Cheshire (Ellis 1993). The expenditure of time, effort and materials necessary to build these hilltop sites by the farming populations involved must have been substantial, therefore the motivating factors for such communities to do so must also have been significant. An estimation of the time and effort that would have gone into the creation of Ravensburgh Castle hillfort, Hertfordshire illustrates this well. Although this is a fully developed Iron Age hillfort, it is a useful representative illustration of the enormous investment necessary to create these monuments. It is believed that around 19,040 timber posts would have been needed to be cut and transported, and it would have taken roughly 175,045 work hours to construct the ramparts around the site (Wileman 2014, 30). The landscape in which these sites were created would have been a significant factor in their creation, and by understanding the landscape setting more fully, it is possible that an understanding of why they were built there may be achieved.

4.1 THE LANDSCAPE SETTING OF LATE BRONZE AGE HILLTOP SITES

As outlined in Chapter Two, landscape studies have come a long way since the mid-1990s with the development of various methodologies, with two being especially influential. The first was the use of phenomenology in archaeology, and the second is the widespread usage of Geographical Information Systems (GIS). The employment of phenomenology within archaeology has been one of the most challenging and thought-provoking theoretical developments in recent years; 'phenomenology aims to describe the character of the human experience, specifically the ways in which we apprehend the

material world through directed interventions in our surrounding' (Brück 2005, 45). On the other hand, GIS, which was described by an early champion as 'a computerized set of tools for collecting, storing, retrieving at will, transforming and displaying spatial data from the real world for a particular set of purposes' (Burrough 1985, 6) has revolutionised the use of spatial technologies in the interpretation of ancient landscapes. This technology is by its very nature one which relies greatly on measurement; it can provide a very useful map-based, quantative approach to intractable archaeological questions. One use of GIS which has been presented as most promising when it comes to social questions is the use of viewshed analysis. This seeks to add a social element into GIS 'by analysing the positions in the landscape from which the monuments could be seen, the social perception of that landscape might be reconstructed linked with an idea of territorial markers and the practice of social rituals' (Wansleeben and Verhart 1997, 60). This method has proved to be useful within hillfort studies, for example a study of *Hillfort Intervisibility in the Northern and Mid Marches* looked at the visible links between these hillforts and taking it a step further, whether these intervisibility groups could be linked to Iron Age tribal groupings (Matthews 2014).

However, there has been a tension between researchers who champion the use of GIS and other spatial technologies and those who favour the more experiential approach such as landscape phenomenology (Gillings 2012, 601). The lack of tangible properties and the very personal nature of the experience that can be true for some qualitative approaches makes those who like to map, measure, interrogate and analyse data uneasy (Fleming 1999). However, both have a constructive part to play when it comes to looking at Late Bronze Age hilltop sites. Both approaches are utilised here; examining the height above ordnance datum (AOD) and interrogating the data to draw conclusions about possible patterns in hilltop site construction related to their height - a more quantative approach. However, by looking at whether these hilltop builders were referencing an earlier utilisation of the landscape by the ancestors, it is possible to draw qualitative conclusions about their experience of the landscape, beyond where was the most utilitarian place to build these impressive monuments.

Late Bronze Age hilltop sites are by their very nature difficult to study. They were often superseded by later Iron Age hillforts, their structure incorporated, modified or replaced by these later monuments. Many studies of Iron Age hillforts go into great detail looking at areas such as the typologies of hillforts, their orientation, landscape settings and construction techniques. This in-depth analysis is largely unavailable to an investigation of Late Bronze Age hilltop sites due to their more ephemeral nature. However, by looking at where the Late Bronze Age builders actually sited their monuments within its wider landscape setting, it is hoped that something might be learnt about the intentions behind their construction. This section will look at the landscape settings of LBA hilltop sites, examining three main areas; height above ordnance datum, availability of water and pre-existing older monuments, to see if any conclusions can be drawn as to why certain hilltop locations were selected. The two main study areas were detailed in Fig.'s 2.5 – 2.7, however, it is important to note that one site, Castell Odo, Gwynedd, does not fit into any of these grouping, and stands alone in this chapter, but will is fully integrated into the settlement and material culture analysis chapters.

4.2 CASE-STUDY HILLTOP SITES

Before the sites in both case study areas are analysed, it is important to have a fuller picture of any investigation work done on them. Understanding how much, or how little investigation has occurred on these sites will inform any trends that subsequently become apparent. Set out below, by case study areas and cluster groups, are tables briefly detailing the location of the sites, excavations dates and (where possible) the size and positioning of trenches. They also provide an overview of the nature of the evidence contained in them (the Late Bronze Age boundaries, settlement features and finds). For ease, Castell Odo has been added to the Cheshire, Flintshire and Conwy cluster group. This should make the level and quality of evidence used in this analysis clearer, and comparisons made between sites and regions will can done so with less ambiguity.

Wales/Marches

Name	Location	AOD	Excavation Date	Trench positions		Enclosure					LBA Dating evidence			LBA Settlement evidence	Overview of LBA finds	Reference
				Enclosure	Interior	LBA pre-enclosure phase	LBA	IA	Undated	No Enclosure	C14	Material Culture	Typology			
The Breiddin	Criggion SJ295144	366m	1933-35 1969-73	Unknown 1969-73: 60m of LBA rampart excavated	Unknown 1969-73: Total excavated area 45 x 42m, including areas of LBA & IA activity	√ (possibly)	√ P, R	√ R			√	√	√	One 5-post structure and a possible 6-post structure. Metalworking area, craft working, occupation layers	Rich LBA finds assembly including metalwork, metalworking, ceramics & tools	Musson 1991
Ffridd Faldwyn	Montgomery SO217969	248m	1937-39	Trenches at SW end of ramparts, either side of entrance	n/a		√ P	√ R				√	Noted as similar to The Breiddin, Old Oswestry & Eddisbury	Small area of occupation deposits believed to be same age as palisade, but no datable finds. Hearth	1 penannular ring, similar to one found at The Breiddin. Small assemblage of ox and sheep bones	O'Neil 1943 Guilbert 1981
Crowthers Camp	Guilsfield SJ2411	153m	n/a	n/a	n/a				√ R			√		n/a	Guilsfield Hoard comprising of 120 pieces of metalwork. Discovered in 1862, precise location unknown	Davies 1967
Llwyn Bryn Dinas	Llangedwyn SJ1172247	271m	1954-56 1983	1954-56: unknown 1983: 3m x 14m trench straddling highest part of the rampart	Very small area behind rampart which contained IA metalworking evidence		√ R	√ R			√	√		No LBA settlement evidence	Small ceramic assemblage, very similar to that found at The Breiddin	Musson 1983 Musson *et al.* 1992
Old Oswestry	Selaithyn & Gaboween SJ296310	161m	1939-40	Seven trenches through ramparts at various locations.	Small extension trench into interior.		√ P	√ R				√	Palisade noted as similar to Dinorben, Ffridd Faldwyn and Eddisbury	No reliably dated LBA settlement evidence, possible metalworking area associated with the crucible, but not dated	Small assemblage of LBA ceramics and one metalworking crucible	Hughes 1994
The Wrekin	Little Wenlock SJ629082	391m	1939 1973	1939: Inner and outer ramparts 1973: Inner and outer ramparts plus the area in between the ramparts	No excavation in interior			√ R			√	√		Sequence of 5 roundhouses, the last one dating to 715-635 *cal.* BC. Hearth	A small LBA ceramic assemblage	Kenyon 1942 Stanford *et al.*1984

R = Rampart P = Palisade B = Bank D = Ditch

Table 4.1 – Site details for Powys and Shropshire cluster group

Table 4.2a - Site details for Cheshire, Flintshire, Conwy and Gwynedd cluster group.

Name	Location	AOD	Excavation Date	Trench positions		Enclosure					LBA Dating evidence			Settlement evidence	Overview of finds	Reference
				Enclosure	Interior	LBA pre-enclosure phase	LBA	IA	Undated	No Enclosure	C14 / OSL	Material Culture	Typology			
Woodhouse	Frodsham SJ511147	229m	1949 2009	Small trench through rampart Four trenches through ramparts	- Two trenches in interior of site		✓ R				✓			-	-	Garner 2016
Eddisbury	Delamere SJ553693	151m	1936-38 2010-2011 2010-2011	Four trenches through rampart 8 trenches, including a re-excavation of Varley's trenches.	- 7 trenches in interior of site Liverpool University training dig in Merricks Hill area of site, again re-examining Varley's excavations Mainly in interior of the site.		✓ P	✓ R			✓	✓		-	Small LBA ceramic assemblage	Garner 2016 Mason & Pope 2016 Pope *et al.* 2020
Helsby	Helsby SJ493754	137m	1955 1963-64 2010	One trench through subsidiary earthwork Four trenches through ramparts Two trenches through rampart	- - -		✓ R				✓			-	-	Garner 2016

R = Rampart P = Palisade B = Bank D = Ditch

Name	Location	AOD	Excavation Date	Trench positions		Enclosure				LBA Dating evidence			Settlement evidence	Overview of finds	Reference
				Enclosure	Interior	LBA pre-enclosure phase	LBA	IA	Undated	No Enclosure	C14 / OSL	Material Culture	Typology			
Beeston	Beeston SJ538592	134m	1968-73	Ministry of Works excavation to consolidate medieval castle			✓ P, R	✓ R			✓	✓		Two 4-post structures possibly LBA. Substantial occupation layer. Metalworking and craftworking evidence	LBA metalwork & ceramics	Ellis 1993 Garner 2016
			1975-85	Numerous trenches through rampart and entrance	Excavation of hillfort interior within outer ward of medieval castle										
Kelsbarrow	Kelsall SJ532675	131m	1973	Small trench through earthworks	-		✓ R				✓	✓		-	LBA bronze pin & socketed axe	Garner 2016
Moel y Gaer, Rhosesmor	Halkyn SK211669	303m	1972-72	Trenches through main ramparts	Trenches in interior of site where a reservoir was to be built.		✓ P	✓ R			✓	✓		-	LBA bronze stud	Guilbert 1973, 1975a, 1975b
Dinorben	Abergele SH968757	112m	1912-22	Trenches through ramparts	-	✓	✓ P, R	✓ R			✓	✓		Roundhouses 1 & 16 assigned to LBA due to presence of metalwork. Craftworking. Occupation layer with hearth in LBA contexts.	LBA metalwork & ceramics	Gardner and Savory 1967 Savory 1971a, 1971b
			1956-69	Trenches through ramparts												
Castell Odo	Aberdaron SH187285	131m	1929	Unknown		✓		✓ P, R (EIA?)				✓		Timber roundhouse with roughly 6m diameter	LBA bead & ceramics	Alcock 1960
			1958-9	Trenches through main enclosure	Trenches in interior of site											

R = Rampart P = Palisade B = Bank D = Ditch

Table 4.2b - Site details for Cheshire, Flintshire, Conwy and Gwynedd cluster group.

Table 4.3 – Site details for Ceredigion cluster group.

Name	Location	AOD	Excavation Date	Trench positions		Enclosure					LBA Dating evidence			Settlement evidence	Overview of finds	Reference
				Enclosure	Interior	LBA pre-enclosure phase	LBA	IA	Undated	No Enclosure	C14 / OSL	Material Culture	Typology			
Castell Rhyfel	Tregaron 7SN32599	476m	Not excavated	-	-				✓				✓ Similar to Lluest y Trafle & Darren Camp, all 3 being considered LBA enclosures (www.Coflein.co.uk)	-	-	Driver 2013
Lluest y Trafle	Ceulanamae smawr SN703850	367m	Not excavated	-	-				✓				✓	-	-	Driver 2013
Caer Cadwgan	Llanfair Clydogau SN 622480	277m	1984-86 1987	Trenches through entrance			✓ R				✓			6-post gateway	-	Austin *et al.* 1987
Darren Camp	Trefeurig SN 670830	242m	1996 2005	Small trench through revetment wall Small scale investigation of rampart terminal				✓ R				✓	✓	-	One LBA pottery sherd	Davies & Lynch 2000 Driver 2013
Bryn Maen Caerau	Llanfair Clydogau SN567484	121m	1988	Dug in advance of building		✓	✓ P	✓ R			✓			Occupation layer 0.2m thick	Plant remains from LBA contexts	Driver 2005 Williams & Caseldine 2001
Pendinas Lochtyn	Llangrannog SN316549	150m	1990-91	Limited trenches in advance of building		✓		✓ R			✓			Isolated posthole with charcoal dated to LBA	-	Scott & Murphy 1992

R = Rampart P = Palisade B = Bank D = Ditch

Table 4.4 – Site details for Pembrokeshire and Carmarthenshire cluster group.

Name	Location	AOD	Excavation Date	Trench positions		Enclosure					LBA Dating evidence			Settlement evidence	Overview of finds	Reference
				Enclosure	Interior	LBA pre-enclosure phase	LBA	IA	Undated	No Enclosure	C14 / OSL	Material Culture	Typology			
Berry Hill Wood	Nevern SN069395	38m	2007	Trench through rampart	Rampart trench extended to rear into the interior		✓ D	✓ (?)			✓			LBA occupation layer	-	Murphy & Mytum 2012
Dale Fort	Dale SM822052	18m	1996-7	Trenches through enclosure	Some trenches in interior		✓ P	✓ R			✓			LBA occupation layer	-	Benson & Williams 1987 Davies & Lynch 2000
Great Castle Head	Dale SM799057	24m	1999	One large trench through rampart	One large area of interior			✓ R			✓		✓ Very similar & close to Dale Fort	4 postholes, C^{14} date from fill of one	-	Crane 1999
Tower Point Rath	Marloes & St Brides SM790193	23m	1971	One large trench through inner bank	A small area around a hut platform in the interior			✓ R					✓ Similar to Dale Fort	-	-	Wainwright 1971
Porth y Rhaw	Solva SM786242	15m	1995-1998	Trenches through ramparts	Trenches in interior of site			✓ R			✓	✓		One metalworking hearth, dated to LBA-EIA transition	One LBA socketed axe found in infill of gully with IA dates	Crane 1996 Barker and Driver 2011
Coygan Camp	Laughame Township SN 284091	27m	1913-14 1963-4	Sectioned the inner rampart in 2 places 1963 – northern defences	1964 – interior inside western ramparts	✓ possibly		✓ R				✓		LBA occupation layer, quern and craftworking	Small LBA ceramic assemblage. Fragmented bone 47 slingshot	Wainwright 1967

R = Rampart P = Palisade B = Bank D = Ditch

Name	Location	AOD	Excavation Date	Trench positions		Enclosure				LBA Dating evidence			Settlement evidence	Overview of finds	Reference
				Enclosure	Interior	Pre-enclosure phase	LBA	IA	Undated	No Enclosure	C14 / OSL	Material Culture	Typology			
South Cadbury	Cadbury SS913053	249m	1913	4 trenches through ramparts	1 trench in interior	✓	✓ D	✓ R			✓	✓		Two rectilinear structures, domestic midden, isolated postholes, metalworking area, querns and lynchets	Rich LBA finds assembly including metalwork, metalworking, ceramics & tools	Barrett *et al.* 2000
			1966-1973	Trenches through ramparts each season	6% of interior dug, 100% surveyed											
Ham Hill	Montacute ST488165	130m	1929	1 trench through rampart	-		✓ R					✓		One rectilinear structure, isolated postholes,	LBA metalwork & ceramics, metalworking moulds. Small assemblage of plant remains	Brittain *et al.* 2012
			2011-14	Several trenches through rampart and entrance	Open area excavated in interior											
Norton Fitzwarren	Norton Fitzwarren ST196263	53m	1968-71	Trenches through entrance and ramparts	Some trenches through interior		✓ D	✓ R				✓		Isolated postholes, Possible metalworking area	LBA ceramic assemblage, metalwork & moulds, very small bone assemblage	Ellis 1980

R = Rampart P = Palisade B = Bank D = Ditch

Table 4.5 – Site details for Somerset cluster group.

Name	Location	AOD	Excavation Date	Trench positions		Enclosure				LBA Dating evidence			Settlement evidence	Overview of finds	Reference
				Enclosure	Interior	Pre-enclosure phase	LBA	IA	Undated	No Enclosure	C14 / OSL	Material Culture	Typology		
Hambleton Hill	Cranbourne Chase ST845126	176m	1974-1986	Many trenches through ramparts	Many trenches in interior			✓ R				✓		-	Large LBA ceramic assemblage	Mercer and Healey 2008
Poundbury	Dorchester SY683911	56m	1939	Trenches through ramparts	Trenches in interior		✓ R					✓		Occupation layer	Small ceramic assemblage	Green 1987
			1966-67	NE end of ramparts	-											
			2006-2013	Trenches through ramparts	Trenches in interior											
Chalbury	Bincombe SY694838	102m	1939	Trenches through ramparts	Trenches in interior	✓		✓ R				✓		Occupation layer	Small ceramic assemblage	Whitley 1943

R = Rampart P = Palisade B = Bank D = Ditch

Table 4.6 – Site details for Dorset cluster group

Table 4.7 – Site details for Cornwall cluster group.

Name	Location	AOD	Excavation Date	Trench positions		Enclosure					LBA Dating evidence			Settlement evidence	Overview of finds	Reference
				Enclosure	Interior	Pre-enclosure phase	LBA	IA	Undated	No Enclosure	C14 / OSL	Material Culture	Typology			
Castle An Dinas	St Columb Major SW945624	208m	1963-65 1994	Trenches through rampart Small rescue dig	Small area of interior dug		✓ B&D	✓ R					✓	-	-	Bishop 2011
Trencrom	Ludgvan SW518362	158m	No excavation, but repair to fire damage resulted in discovery of LBA ceramics	-	-		✓ R					✓	✓ Group of 4 very similar sites in West Penwith dated to LBA through similarities, one of which (Maen Castle) dated to LBA.	-	2 LBA sherds in rampart	Herring 1999
Killibury	Egloshayle SX019737	82m	1974 1975-76	Small trench near farm buildings Trenches through rampart	 Trenches in interior of site	✓		✓ R			✓			One 4-post structure, isolated pits	One LBA sherd	Miles *et al.* 2008
Lescudjack	Penzance SW475310	53m	-	-	-				✓				✓ See Trencrom above	-	-	Herring 1995
Bosigran	SW416370	36m	-	-	-				✓				✓ See Trecrom above	-	-	Herring 1994
Maen Castle	Sennen SW348256	28m	1939	Very small excavation	-		✓ R						✓ See Trencrom above	-	-	Herring 1994
St Michael's Mount	St Michael's Mount SW5152998	26m	Mid-1990's Watching briefs during building work. Conducted by Cornwall Arch Unit.	-	-							✓		One hut platform, isolated postholes.	19 LBA ceramic sherds Copper ingots in LBA contexts. Quern	Herring *et al.* 2000
Kendijack	St Just SW355327	16m	-	-	-				✓			✓	✓	-	Small hoard of bronze items	Tylecote 1967 Sharpe 1997

R = Rampart P = Palisade B = Bank D = Ditch

4.3 Height Above Ordnance Datum (AOD)

As their name suggests, hilltop sites are generally built on hills as these are the high points in the landscape, and this will be the first area of analysis. The aim in looking at the AOD for Late Bronze Age hilltop sites is to initially evaluate their positions within their landscape to see if that can give any clues as to why these monuments were originally created. Were these the first sites being built on the highest point in their locality? Were they being built in any particular type of landscape? Can we see any patterns or commonalities developing over the choice of location in which they were being built? To do this, the hilltop site location was firstly categorised into landscape types (High Upland, Moderate Upland, Lowland and Coastal), with the AOD plotted for each. Appendix 2 details the AOD for each individual site. As Fig. 4.2 shows, the predominating landscape type for Late Bronze Age hilltop sites overall was Lowland (between 0-199m), followed by coastal. Although informative – it shows that LBA hilltop sites were not built in the highest landscapes - this information needs to be understood at both a regional and an individual level to truly get an understanding of the landscape settings for these sites. A comparison of both regional areas (Fig. 4.3) shows that both study groups broadly followed this pattern, but with SW England showing a greater preference for coastal sites within the overall data set. This broad analysis of the landscape type being utilised by the hilltop builders raises the interesting question of whether or not they were selecting locations by where they sat in the landscape.

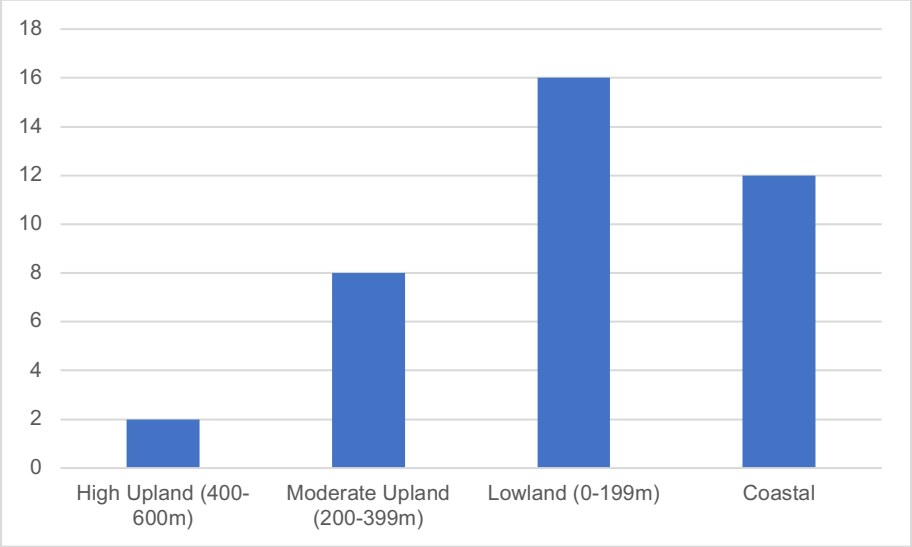


Figure 4.1 – AOD by landscape type for all sites (n = 40).

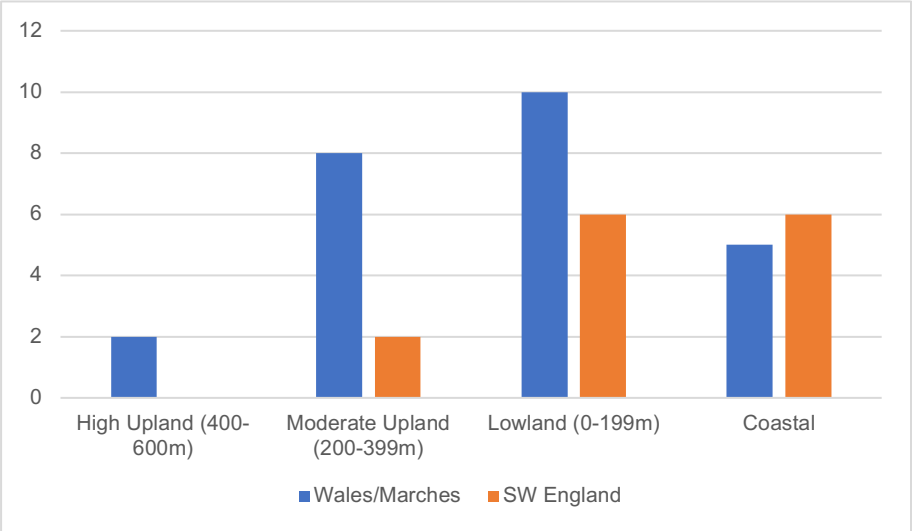


Figure 4.2 – AOD for landscape type by regional groupings.

In order to fully understand if the builders of hilltop sites had any strong preference for a particular landscape type, it is necessary to look at individual clusters and locations. To be able to do this, each hilltop site location was plotted on a scatter graph, along with the heights of all surrounding high points. This was done in Edina Digimap using an Ordnance Survey 1:25,000 Colour Raster Map, which covered an area of roughly 93 km^2. No less than ten high points were measured, with more if the landscape allowed. For example, in the hilly surroundings of Castell Rhyfel, Ceredigion, 14 points could be measured, but in the less hilly area around Poundbury, Dorset, only ten were measured. These high points were then plotted onto a scatter graph, showing where the site (the red dot) sat within its immediate surroundings (Appendix 3). The results show a degree of variation within and between individual clusters within the same region, and between regions. For example, in the Cheshire, Flintshire and Conwy cluster the westernmost site, Dinorben (Fig. 4.4), before it was destroyed by quarrying, sat on a ridgeline which had a good strategic view forward towards the coast and back towards the Clwydian Range of hills. However, its actual position was at the lowest level on the ridge (Fig. 4.5). By way of contrast, the Cheshire and Flintshire element of the cluster shows contrasting evidence for using much more dominant hills within their locality (Fig. 4.6). Within this group, most of the sites have been built either on the highest of the hills, or on hills within a few metres of the highest in the vicinity. For example, Woodhouse sits towards the northern end of the Cheshire Sandstone Ridge and is therefore in a dominating position. However, it goes further than that. It looks out towards the River Mersey estuary and is therefore in a very strategically important position. For other sites, even when it looks on the graph that the chosen hill does not seem like it is in a particularly dominating within its surrounding area, as at Beeston Castle, an examination of the actual site will show otherwise. Beeston Castle is sited on a hill within a gap to the Cheshire ridgeline, and therefore appears as a much more dominant position than the AOD would lead you to expect (Fig. 4.7). It is visible from many kilometres away, from both the Clwydians and Hope Mountain, Flintshire. This was demonstrated during a community-based experiment in 2011, held as part of the *Heather and Hillforts* project, entitled 'The Hillfort Glow'. This event looked at the intervisibility between ten hillforts in NE Wales and Cheshire, with Beeston Castle being visible from eight out of nine other hillforts in this area (Helsby, Maiden Castle, Beeston Castle,

Kelsbarrow, Burton Point, Moel y Gaer, Rhosesmor, Penycloddiau, Moel Fenlli and Caer Drewyn) (Robinson and Soper 2011, 11). Five out of the six hilltop sites on the Cheshire Ridge have some dating evidence for Late Bronze Age occupation (Garner 2012). Beeston Castle is the most securely dated and best excavated one and has provided evidence of an extensive and well defended hilltop site here in the Late Bronze Age (Ellis 1993). This part of the group seems to show a building preference for more dominant hills within the landscape. The big question would be whether this is more about seeing out, or being seen – is being at the highest point itself the main attraction, or is it about having an easily defendable position? Beeston Castle is a highly defendable location, shown well by the presence of a medieval castle on top of the hillfort. Eddisbury, Helsby and Woodhouse all look out over a wide area from their position. At the moment this raises tantalising questions, but ones that cannot be answered without further examination of all the evidence.

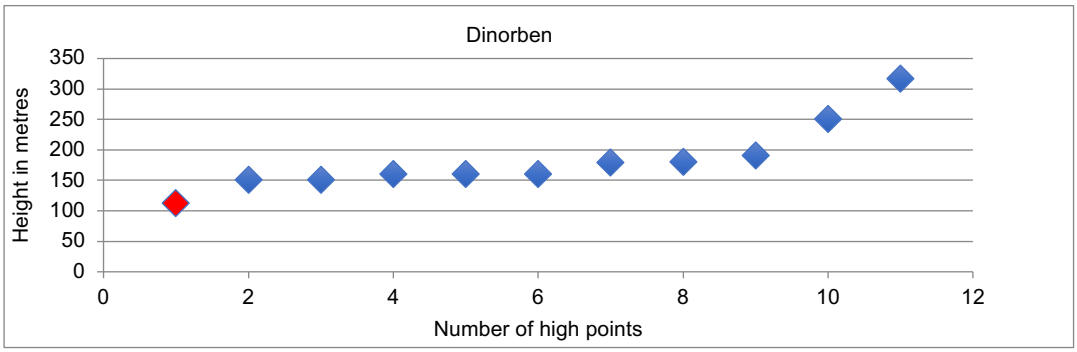
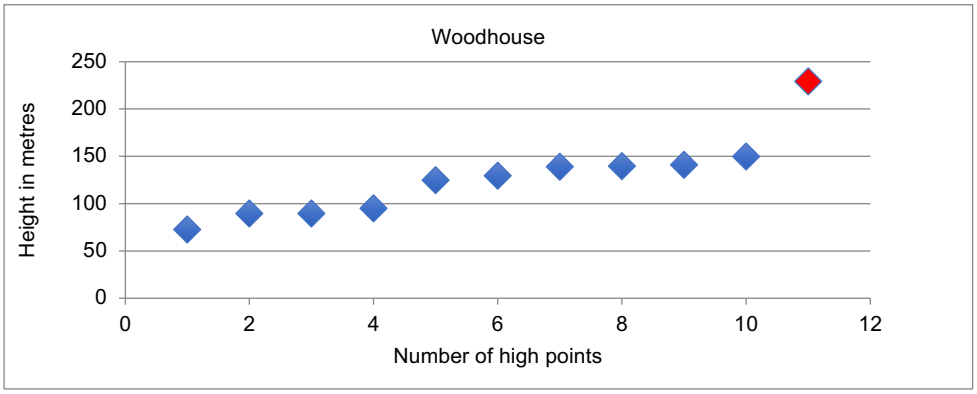
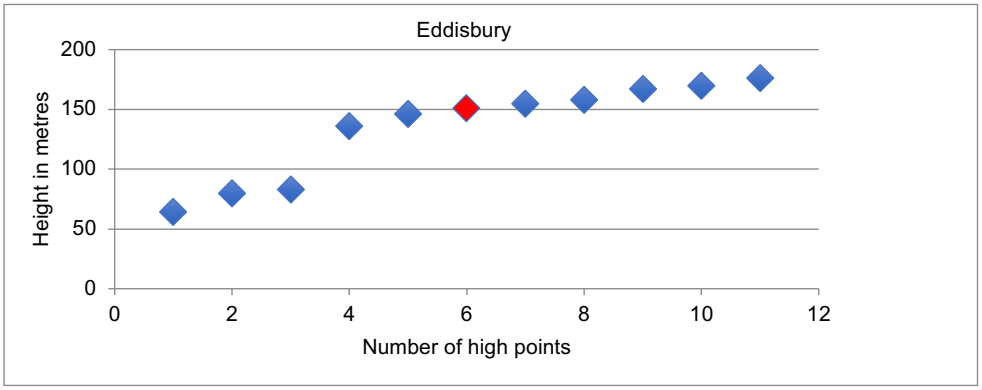


Figure 4.3 – AOD for Dinorben, Conwy (red = hillfort; blue = surrounding hills).

Figure 4.4 – Dinorben: site stood where gap in ridge line can now be seen (photograph taken by author, July 2012).





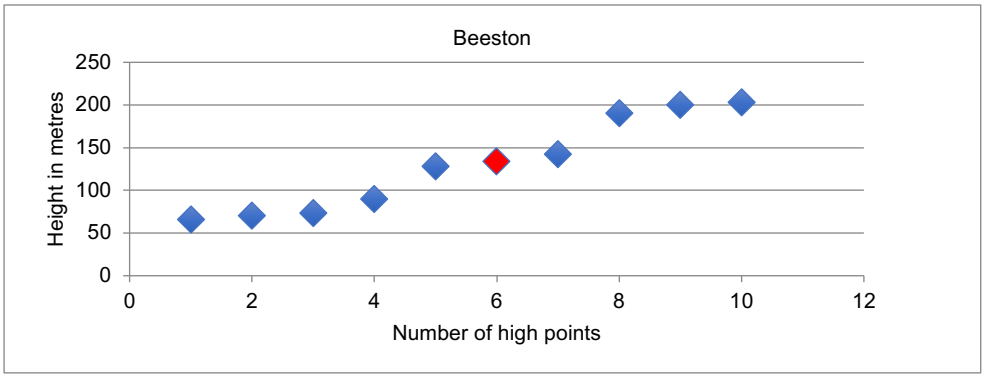


Figure 4.5 – AOD within locality for Cheshire & Flintshire cluster.

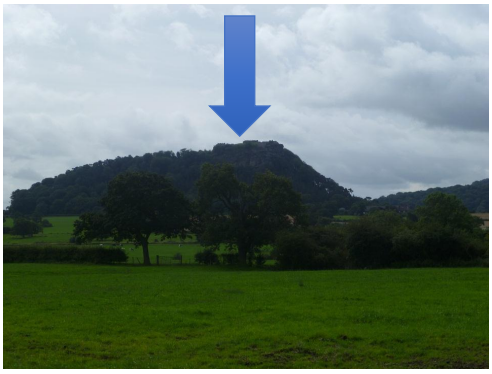


Figure 4.6 – Beeston Castle (Photograph taken by author, August 2012).

The Powys and Shropshire group of hilltop sites all tend to be built on hills at the top end of their surrounding area apart from one, which is in a riverine environment (Crowther's Camp). They are built on strong and commanding hills, within an upland environment that has a number of commanding hills. For example, at The Breiddin (Fig.'s 4.8 and 4.9), excavations in the 1970s showed evidence of a strong hilltop site surrounded by a rampart on a dominating hill in the Late Bronze Age (Musson 1991). This shows that the hilltop builders within this cluster, as with the last one, were primarily interested in building on hills that dominated their area. They would have been visible for miles around, which could have been important as a strong statement of intent to neighbouring groups. What this intent was is at the heart of hillfort studies. Defensive position, central point or place to come together for celebrations

(Brück 2007; Cunliffe 1990, 2005; Driver 2018; Henderson 2007a, 2007b; Hill 1989,1995b; Tubb 2011)? What can be said for certain in this group is that the chosen hills were dominant; these were monuments that were designed to be seen. In contrast, the Ceredigion cluster group, although also built on high ground, are all built in the mid-range for their landscape. The builders within this group did not see prominence as their highest priority as much as the Powys and Shropshire or Cheshire, Flintshire and Conwy cluster groups did. It seems that there may be cultural choices being seen at work here. Hilltop builders in different areas, although geographically close, look as if they were making specific choices based on the height and dominance of the hills they built upon.

Figure 4.7 – The Breiddin (photograph taken by author, May 2012).

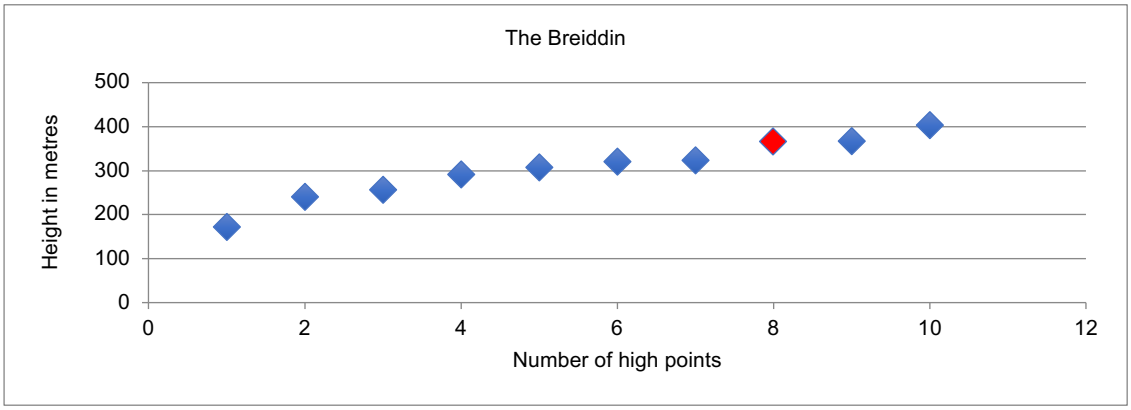


Figure 4.8 – AOD for The Breiddin, Powys and Shropshire cluster.

Something totally different is happening in the Pembrokeshire and Carmarthenshire group of five hilltop sites. They are all built at the lowest point in their surroundings (average 26m above sea level) and are coastal promontory forts. This shows a marked contrast to all the other clusters in the Wales/Marches study area and may therefore be indicative of a different set of parameters being applied to the building of these hilltop sites as the whole dynamic of these sites is different. It would seem that on this west facing coastline, these sites were built looking out towards the sea instead of inland towards their surrounding area such as at Dale Point promontory fort (Fig.'s 4.10 and 4.11). These sites are referencing the sea and seaward links, and do not have that imposing dominance that hilltop sites in other areas of Wales/Marches have. Most of these promontory forts have the sea to three sides, which could either be a defensive tactic, or one that shows maritime links are more important than landward

ones. Indeed, the whole cluster group area is one that it is girded by the sea to three sides. This maritime setting is an area investigated further later in the thesis.

Figure 4.9 – Dale Point promontory fort (www.Coflein.gov.uk).

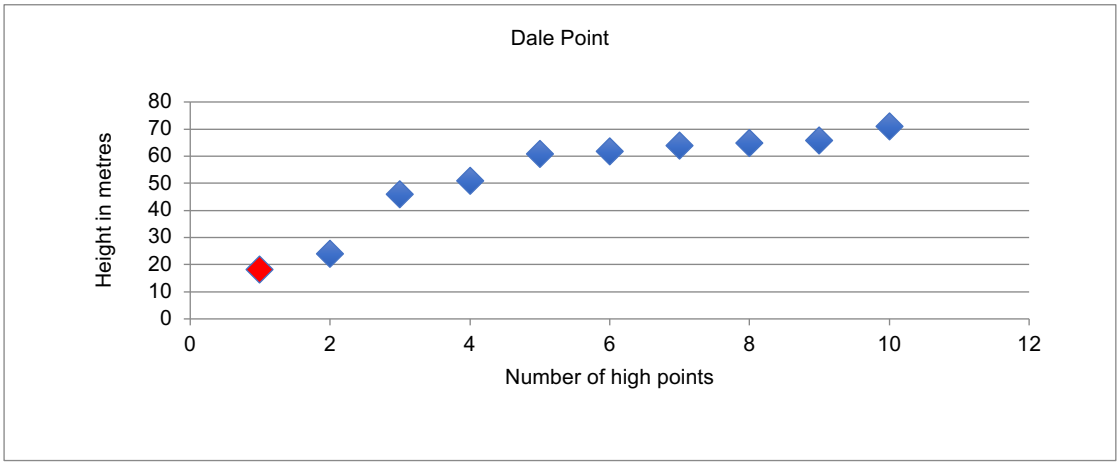


Figure 4.10 – AOD for Dale Point promontory fort.

The SW England study group shows some equally intriguing patterns. The group of three hilltop sites in Somerset are all at the top end of the height of hills in their vicinity. Dorset has one site, Hambledon Hill at the top, with the other two (South Cadbury and Ham Hill) in the mid-range for their surroundings. The main interest comes within the Cornish study area, with a marked difference between the north and south of the area (Fig. 12). Within the northern area the two sites are on Bodmin Moor, and so by their very nature are high sites. However, they are also at the top end of their surroundings, with most within a few metres of the highest points in their area. When looked at in detail, these sites were built at the top end within their surroundings as the scatter graph of Castle An Dinas illustrates (Fig. 4.13). By contrast, the majority of sites in the southern Cornwall grouping (Fig. 4.12) are coastal and are at the lowest points in their surroundings, an example of which can be seen at Bosigran (Fig. 4.14). The exception to this is St Michael's Mount (Fig. 4.15). Although coastal, and at the lowest point in its surroundings, it is however in a very dominant position within its locality atop a tidal island; a site built on the top of the mound would be in a noteworthy location extremely visible from all directions. There

is a significant variation with the siting of the hilltop sites within the Cornish grouping, which has very strong echoes within the Welsh groups. For example, the Powys and Shropshire group are like the north Cornwall group insofar as they are both at the top end of their locations. However, there is much more significant similarity between the south Cornwall group and the Pembrokeshire and Carmarthenshire group. In these groups all of them are coastal and at the lowest points in their landscape; sites in both these areas are surrounded by sea on three sides. It is certainly possible that in the Late Bronze Age there was communication between these two areas facilitated by sea travel, as land travel would have been much more arduous and therefore cultural links may have been forged this way. Both these groups have a maritime outlook which is missing from the more landlocked moorlands of Bodmin Moor and the Marches. The more difficult relationship to explain is the differences between the mid-range height groups like Ceredigion, and those on the more dominant hills such as in Powys and Shropshire group. The terrain is not dissimilar in both areas, indeed geographically they are reasonably close, so there must be different imperatives at play as to why one group chose the highest of their hills and the other group chose those at the mid-range of theirs. Whilst it is possible that cultural links could have prompted the building of the same type of sites in the maritime areas, and it is not unreasonable to think that there were links between the two dominant groups of Cheshire, Flintshire and Conwy and Powys and Shropshire as they are relatively close to each other, it seems that the same links were weaker between these two groups and Ceredigion.

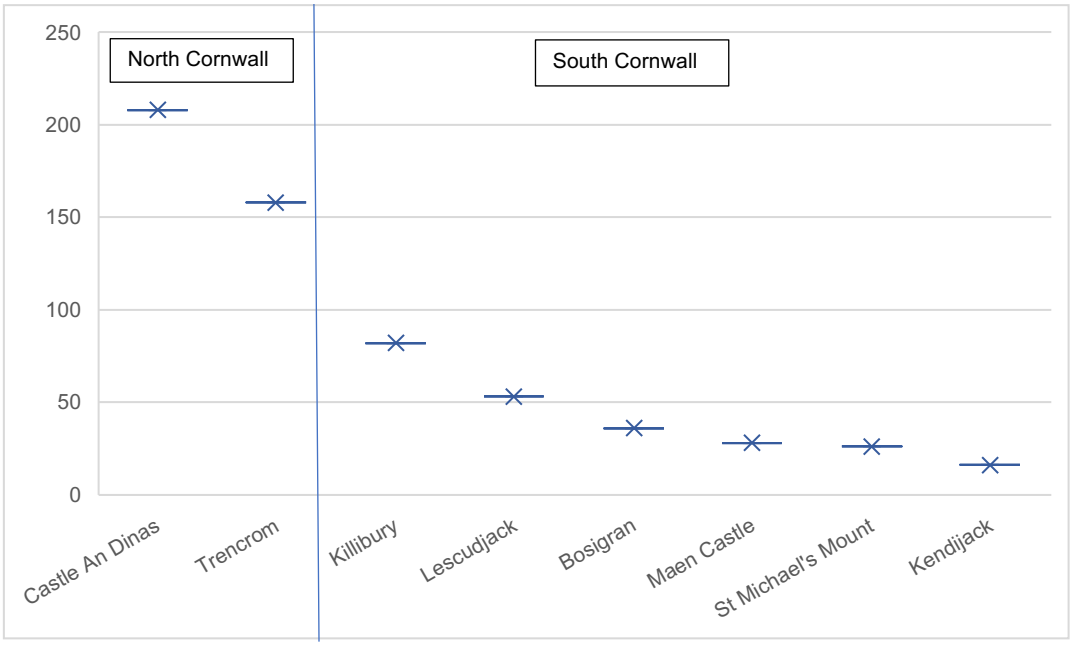


Figure 4.11 – AOD for northern and southern sites in the Cornwall group.

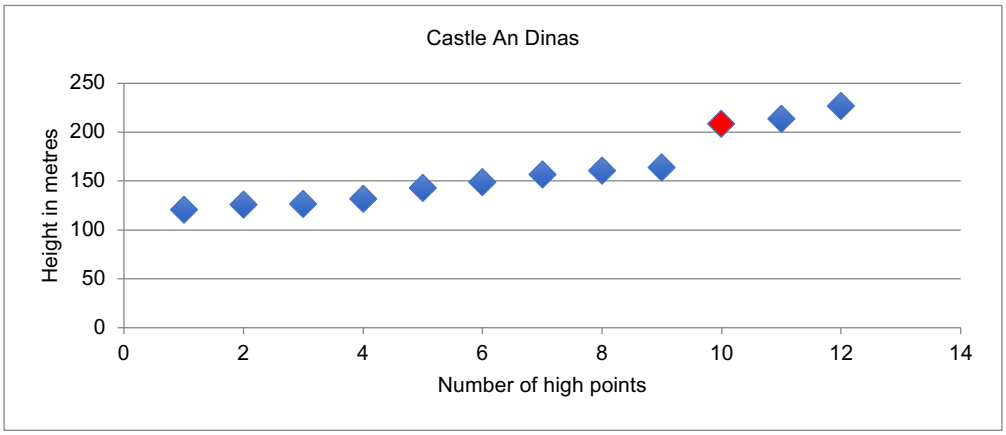


Figure 4.12 – AOD for Castle An Dinas, north Cornwall.

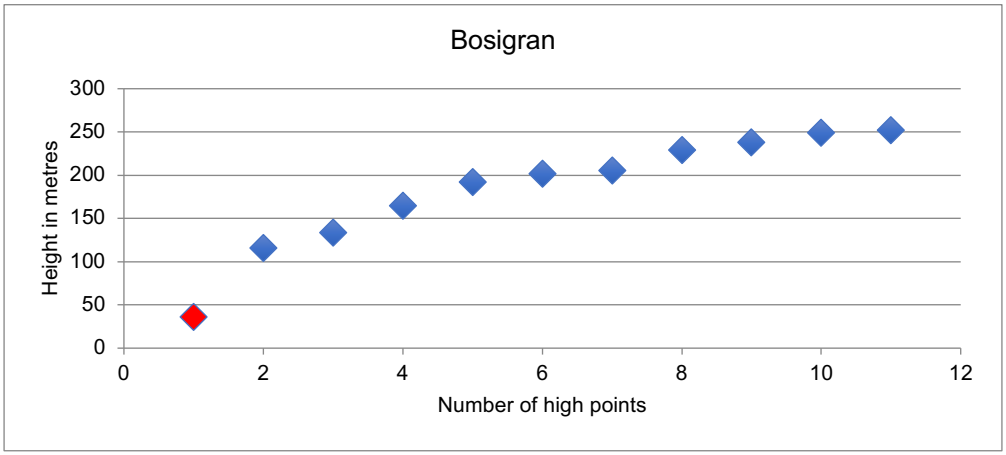


Figure 4.13 –AOD for Bosigran, south Cornwall.

Figure 4.14 – St Michael's Mount (www.stmichaelsmount.co.uk).

This study of the height above ordnance datum for these Late Bronze Age hilltop sites has been instructive insofar as it has identified some trends in their construction. Three distinct types of group have emerged, illustrated in Fig. 4.16; those in areas of higher ground where the sites were built towards the top end of their surroundings, for example in Powys and Shropshire and northern Cornwall, those in the middle of their surroundings like Ceredigion, and low lying, maritime groups where the sites were

built mainly as promontory forts on the edge of the land facing towards the sea, as in Pembrokeshire and Carmarthenshire and south Cornwall. The fact that these two maritime groups face each other across the Bristol Channel cannot be ignored. Another potential cluster of LBA coastal promontory forts exist on Anglesey and the Llyn Peninsular, and whilst not examined here, they add to the growing body of evidence for maritime links along the Irish Sea. A more detailed examination of the SW Wales – SW England coastal groups further on in this thesis will look to see if there are any other similarities that may serve to suggest whether these two areas could have had cultural links in the Late Bronze Age.

Figure 4.15 – Location of maritime, mid-range and dominant groups.

4.4 The availability of water on Late Bronze Age hilltop sites.

> 'One aspect of hillfort location that is frequently remarked on by general observers but generally ignored by professional archaeologists is proximity to water supply.'
>
> (Harding 2012, 17)

Discussions about resources necessary for the building of hilltop sites have centred upon the labour and materials actually needed to build the hillfort itself, rather than the resources necessary to support life on the hilltop once established (Dixon 1994; Harding 2012; Hogg 1975). If we think that hilltop sites in the Late Bronze Age might be to do with pastoralist agriculture (e.g. Cunliffe 1990) then the availability of water becomes even more salient. The availability of water resources is an area that has largely been overlooked by academics, and therefore one that is now ripe for investigation. For example, in a 2006 study of hillforts within Northumberland National Park, the question of where people got their water was answered in one paragraph with the suggestion that they might have used leather bags attached to roundhouse roofs to catch rain and failing that it was carried in from 'elsewhere' (Oswald *et al.* 2006, 81). This is not a very satisfactory response to a question that actually goes to the heart of the function of these sites to the community it served. The presence of water on hilltop sites is commented on when they are encountered during excavations, for example springs inside the hillfort at Mam Tor, Derbyshire (Coombs and Thompson 1979), a pond inside The Breiddin, Powys (Musson 1991) and springs on the slopes of Midsummer Hill, Herefordshire (Stanford 1981). However, little work has gone into the examination of actual water resources, and the social implications of having water sources at or near hillfort sites.

One notable exception is the *Danebury Environs Project*, which looked at the distances of all the sites within the Environs Project from the nearest water source (Cunliffe 2000, 69). The main focus of this study was to look at stock management (Fig. 4.17) – the proportion of cattle found at a site in relation to the distance to water, which showed that as cattle need regular access to 40-50 litres of water per day, the sites with the highest concentrations of cattle remains were those closest to water supplies (Cunliffe 2000, 69). Cattle are obligate drinkers – they need open water to drink from, whereas sheep and goats can cope with water from dew and rain on vegetation but do also benefit from open water, especially when lactating (S. Stallibrass pers. com. 2021). Cunliffe's approach is one that although fascinating, is impossible to replicate in this study due to the lack of detailed animal bone assemblages at the Late Bronze Age hilltop sites being examined. However, the conclusions that the project reached about distance from water and proportion of cattle/sheep are important and will be applied whenever possible. This is another method of extracting social data from hilltop sites to assist with the analysis of why they were first established.

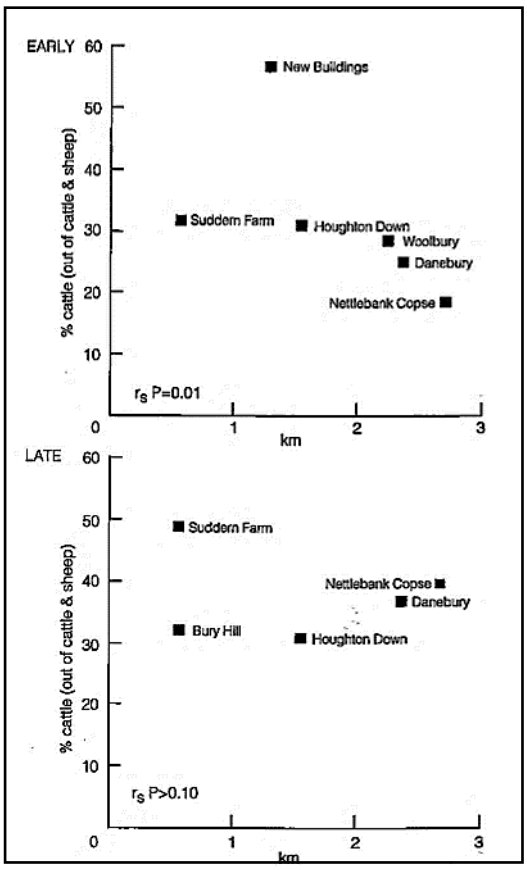


Figure 4.16 – The proportion of cattle at Danebury and Environs sites in relation to their distance from water (Cunliffe 2000, 70).

One important line of enquiry when looking at the social implications of the proximity of water to Late Bronze Age hilltop sites is ethnographic studies. Water is vital for both animals and humans, and as the Harding quote above illustrates, the availability of water on hilltop sites, or lack thereof, is something often observed and questioned when visiting these sites. Whilst in most cases it is impossible to

examine how these ancient communities accessed their water supplies directly, by looking at modern rural communities with no direct access to piped water sources, it is possible to draw some analogies to what could have been happening on these Late Bronze Age hilltop sites. A United Nations High Commissioner for Refugees Report from 1992 stated that the minimum amount of water necessary to fulfil all of one person's washing, cooking and drinking needs per day is 15 litres of water (UNHCR 1992). In 2012, a study of safe carrying loads for women carrying water in rural India concluded that the average speed of women carrying either a 15 kg head load or a 10 kg shoulder/waist load was roughly 3.5km per hour, and that they generally fetched between 15-40 litres of water daily from a source within 1km of their dwelling (Sharma and Singh 2012). A 2010 study of similarly rural and disadvantaged communities in South Africa stated that a very high proportion of children were used for collecting water, with this activity taking up two thirds of their time available for domestic activities (Hemson 2010). These modern methodologies enable an examination of the social implications of the distance from, and types of water sources available to LBA hilltop sites. No study of this kind has yet been done for hilltop sites and this has been an important strand of information when assessing the social dimension to the origin of these sites.

The examination of the availability of water on the hills that were utilised by these builders, and the type of water source that was available is indicated in the full knowledge that these structures were built *c.* 3,000 years ago, and that much may have changed in a particular landscape since then. However, the pertinent question is just how much could have changed during this time? A study of various upland areas in northern Britain illustrates that although changes to the alluvial landscape have occurred within this timeframe, mainly due to human activity, the basic landscape has remained relatively stable (Harvey 2012, 101). It is therefore a valid exercise to look at the water sources available today as a proxy for those available in the Late Bronze Age, so long as care was taken to exclude any water source that could possibly postdate this period such as drainage systems and canals. Although the landscape does change the main elements present such as the courses of rivers and streams, and the positions of springs and marshes do have a longevity through the millennia that still make this a pertinent area to study. The availability of water on hills may give clues to the community's intention. If the hilltop site was built on a hill that has a good supply of water, this could signify that this was an important factor in siting it where it was – that people or animals or both would be residing on the hill for whatever reason and would therefore need water. Work done by Reynolds (1987) has shown that cattle have a daily requirement of water about 40-50 litres, a significant amount especially when human consumption is added. If it can be shown that the builders placed an importance on the presence of water, this may help explain some of the factors being considered by the builders which in turn may help explain their intentions. Whether this was for ritualistic purposes; for festivals and ceremonies that acted as a focus for the wider community (Hill 1995b), acting as a hub for dividing the landscape for agricultural and pastoral reasons (Cunliffe 1990; Hamilton and Manley 2001) or for reasons associated with defence (Armit 2007; James 2007), by looking at the availability and types of water source we might get some indications as to their intentions.

Each hilltop site was examined within their locality using Edina Digimap, firstly at 1:25,000 Scale Colour Raster for an overview, and then using OS VectorMap Local Raster for more detail. The water sources

were identified and classified as follows, with the percentages of hilltop sites with water sources in both study areas at Fig. 4.18. As well as how close water sources were to the hilltop site, details of whether sites were either coastal or riverine was included. Whilst rivers can provide drinkable water, which obviously sea water does not, they can both facilitate transport links, which will be examined later. These categories are not exclusive, as Tables 4.8 and 4.9 illustrate. Whilst some sites only have one water source, others have several and therefore are included in more than one category.

- Coastal
- Riverine
- Water at location (available on the hill)
- Water adjacent (within 100m of the hillfort)
- Water available within 1km
- Water available between 1 – 1.9km
- Water available within 2 – 3km
- No water sources

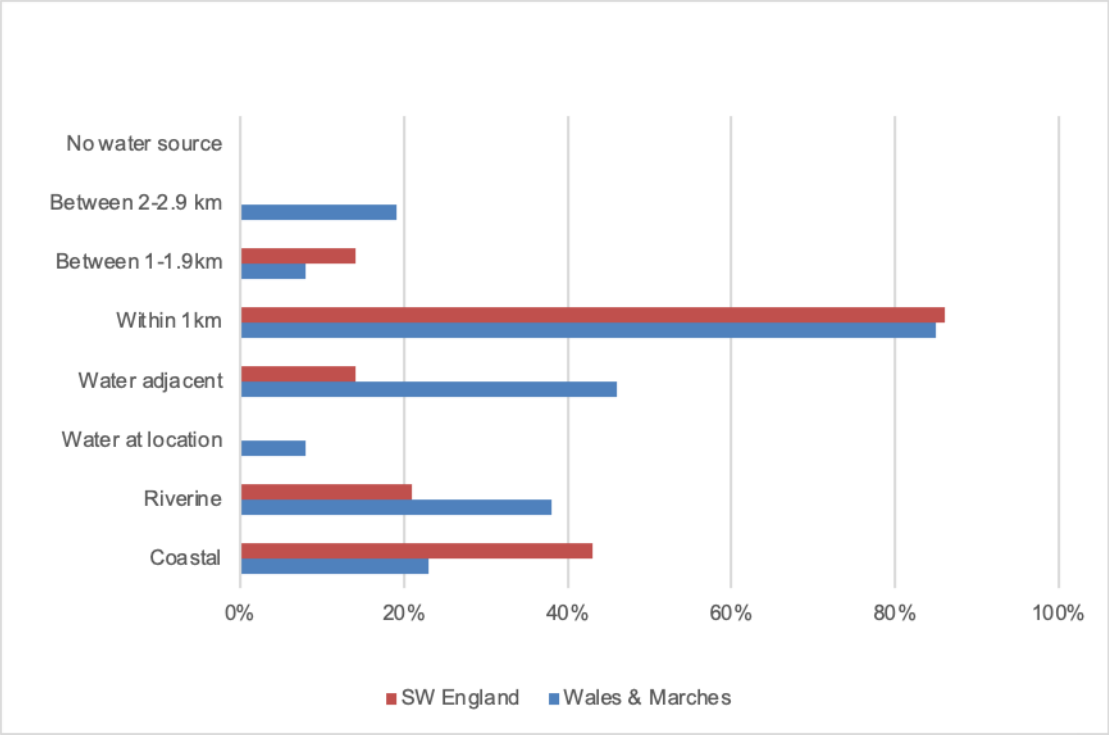


Figure 4.17 – Percentage of hilltop sites and available water sources for both study groups.

What becomes immediately clear is that the Wales/Marches group have a much higher proportion of water sources available to them. Over half of this study group have water available at the location, or adjacent to it (within 100m) as opposed to just 14% of the SW England group. Whilst this may be purely down to the fact that the weather in Wales/Marches does tend to be wetter than areas further south, it could also signify that for the Wales/Marches group the close proximity of a water supply was a higher priority. Not all hilltops have usable water supplies in their immediate vicinity, so this could suggest that the activities taking place on those hills were those that may have required a close supply of water.

These activities may have been to do with corralling of animals which would demand a constant supply of water whilst on the hill (Ralston 2006, 21). It may also have been for periodic human habitation, when the daily descent and ascent of these hills to the valley below for water may have been too much if needed over a longer period of time.

Having water within 1km seems to have been important to both groups; all sites have water sources at least within 1 km (Tables 4.8 and 4.9). What could this mean for the occupants of these hilltop sites? The 2012 study of safe carrying loads for women carrying water in rural India detailed above (Sharma and Singh 2012), whilst a modern study conducted in an area of the world with a different climate which doesn't take into consideration the descent and subsequent ascent of the hills, gives a broad analogy to the daily work necessary to fetch water from a supply within 1km: the women could each fetch between 15-40 kg daily. Therefore, given the not inconsequential workload needed to bring in water even from up to 1km away, it is possible that we are beginning to see cultural choices being made within the two groups, possibly related to their agricultural practices. Whilst livestock can walk daily to drink at the nearest water source, people living on these hilltops caring for them would need a daily water supply for drinking, washing, cooking and brewing beer. It would seem a sensible conclusion that the more important it is to have a constant supply of water, the more necessary it is to have this water source close by. Therefore, logically, it would suggest that the activities taking place in the Wales/Marches area were more dependent on having a good supply of water such as those dependent on animal husbandry. This view seems to be reinforced when the numbers of hilltop sites with multiple water sources is examined (Fig. 4.19). Wales/Marches have a greater number of sites with multiple sources of water, reinforcing the idea that the presence of water was more important to the hilltop site builders in this area.

Name	Coastal	Riverine	Water source at location	Water source adjacent (within 100m)	Water source within 1km	Water source within 1- 2 km	Water source within 2- 3 km	No local water source
Eddisbury					✓			
Kelsbarrow			✓		✓	✓		
Beeston					✓			
Woodhouse					✓		✓	
Helsby				✓	✓			
Moel y Gaer Rhosesmor				✓	✓			
Dinorben					✓	✓		
Castell Odo					✓			
Old Oswestry				✓	✓		✓	
Llwyn Bryn-Dinas		✓	✓	✓				
The Breiddin		✓		✓	✓			
Crowther's Camp		✓		✓	✓			
Ffridd Faldwyn					✓		✓	
The Wrekin					✓		✓	
Lluest y Trafle		✓		✓	✓			

Darren Camp		✓			✓			
Pen Dinas Lochtyn	✓	✓			✓			
Castell Rhyfel		✓			✓			
Caer Cadwygan				✓	✓		✓	
Bryn Maen Caerau		✓		✓	✓			
Berry Hill Wood		✓			✓			
Tower Point Rath	✓				✓			
Great Tower Head	✓				✓			
Dale Fort	✓			✓				
Porth y Rhaw	✓	✓		✓	✓			
Coygan Camp	✓			✓				

Table 4.8 – Available water sources for the Wales/Marches group.

Name	**Coastal**	**Riverine**	**Water source at location**	**Water source adjacent (within 100m)**	**Water source within 1km**	**Water source within 1-2 km**	**Water source within 2-3 km**	**No local water source**
Norton Fitzwarren		✓			✓			
Cadbury Castle					✓			
Ham Hill					✓			
Hambleton Hill					✓	✓		
Poundbury		✓		✓				
Chalbury					✓	✓		
Killibury		✓			✓			
Castle An Dinas	✓				✓			
Trencrom					✓			
Bosigran	✓				✓			
Kendijack	✓				✓			
Maen Castle	✓				✓			
St Michael's Mount	✓			✓				

Table 4.9 – Available water sources for the SW England group.

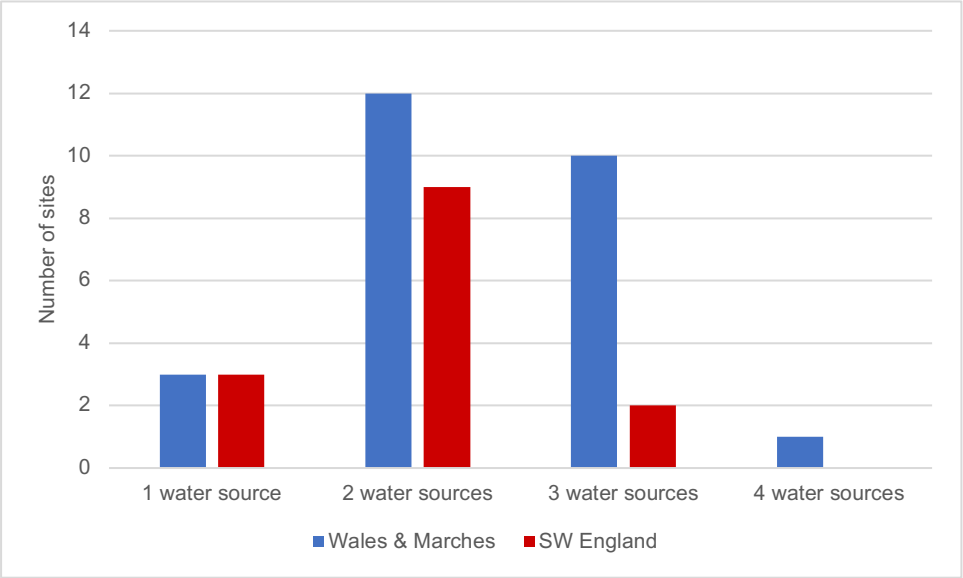


Figure 4.18 – Numbers of hilltop sites with multiple water sources.

The types of water source were also examined (Fig. 4.20), the results again show a regional variation with SW England having a marked preference for springs, small ponds and streams suggesting that it is the availability of fresh flowing water that was important in this area. The conclusion to draw from this is that it is probably being used for human consumption. Examination of many ancient society's use of water supply has shown that from the earliest civilisations onwards, groundwater supplies were regarded as the safest for human consumption, with springs and then wells the most favoured sources of water (Juuti *at al.* 2007, 50). Whilst these are also important water sources in Wales/Marches area, they have more of a spread in their choice of water source. How can this be explained? Building on the data from the distance from the water source, this could perhaps back up the theory that the Wales/Marches LBA hilltop sites were being used in an agricultural capacity. Whilst the groundwater sources are probably for human consumption, the wider spread could indicate that these other sources were being used for agricultural purposes such as watering livestock. This does not discount the possibility that livestock husbandry was important in SW England, however, it does suggest that it was of higher significance in Wales/Marches.

Another area where Wales/Marches shows a difference from SW England is that it has a higher percentage of sites in riverine environments. In SW England 14% of sites are next to a major river, whilst in Wales/Marches the figure is 31%. Minor rivers account for 21% of SW England sites and again 31% of Wales/Marches sites. Whilst not discounting the importance of rivers as a water supply, perhaps another characteristic that was important here was that of methods of travel. The topography of Wales/Marches is markedly different to most of SW England (the exceptions being the high moorlands of Bodmin Moor, Exmoor and Dartmoor), and it is more mountainous and harder to traverse. Therefore, it is probable that in this mountainous terrain the easiest way to travel across it was to use the river valleys. The use of riverine locations for the construction of hilltop sites in Wales/Marches could therefore be the result of a need to use these river valleys for travel and communication. Many of those sites in riverine locations are within a few 100m of the river, with most overlooking it. This would make

it convenient to not only travel themselves on these rivers, but also to possibly control the flow of other people and trade goods travelling on them, giving the communities a distinct advantage both in terms of controlling trade and for defensive purposes. Can this be seen within the more upland regions of SW England? Surprisingly it is not; none of the hilltop sites in either north or south Cornwall are built near rivers. This lack of riverine locations in probably explained in south Cornwall by the fact that as all of the hilltop sites were built in coastal locations, travel here was coastal or maritime rather than riverine. Is this reflected in the Wales/Marches maritime grouping of Pembrokeshire and Carmarthenshire? Interestingly it is. The three coastal sites have no nearby rivers, leaving only Berry Hill Wood, situated 200m from the Afon Nyfer near to where it meets the sea, in a location that can be described as both riverine and coastal. There seems to be developing evidence that the types of water source for these hilltop sites had different uses that went beyond the availability of drinking water. It is probable that the situation was much more nuanced than that, with different populations utilising their local water sources for different needs.

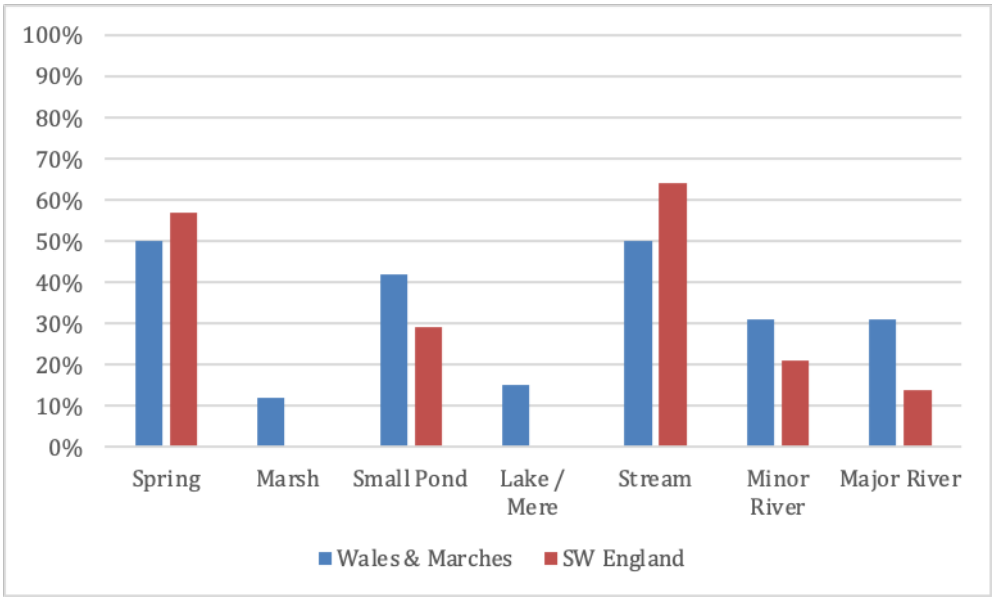


Figure 4.19 – Percentage of water source types on hilltop sites.

The study of the availability and types of water source for Late Bronze Age hilltop sites builds upon the information gleaned from their heights above ordnance datum, developing the picture emerging about the types of sites chosen by these ancient builders. Communities seem to be choosing specific topographical areas on which to build these hilltop sites, as well as specific decisions being made about the type and location of their water sources. To complete this examination of the landscape settings of Late Bronze Age hilltop sites, evidence of whether these hills had been utilised by more ancient communities will now be examined to see if these hilltop builders were referencing past societies as a marker for their own development.

4.5 Evidence of pre-existing ancient monuments

> 'The construction of monuments in places with an established significance transforms the entire way in which these locations are experienced.'
>
> (Bradley 2007, 104)

During the Late Bronze Age, the move to enclose hilltops marked a change within the communities that created them. Whether this was a result of 'inter-community co-ordination based on pastoralism and the sporadic use of the hillfort' (Hamilton and Manley 2001, 31), or as residences for elites and the foci for community assembly (Cunliffe 2013, 260), the fact remains that they were a new development. However, by looking at whether these sites were built on hilltops that showed evidence of more ancient usage might give us a clue towards these populations' intentions. The landscape is not a neutral space that people impose their will onto but is an already encultured landscape rich in meaning (Bradley 2007; Brück and Goodman 1999; Gerritsen 2007; Tilley 1994). As Gosden and Lock (1998, 3) said 'history mattered to many in prehistory'. The subject of the placement of hillforts referencing older activity has been discussed by several authors (Bowden and McOmish 1987; Gerritsen 2007; Gosden and Lock 1998; Hamilton and Manley 2001). Some believe that the placement of hillforts on the same hilltops as older monuments could be purely coincidental, whilst others give examples of where there was an obvious relationship between the two, such as Thundersbarrow Hill in Sussex where the entrance faces straight onto an earlier barrow (Brück 2007; 31; Hamilton and Manley 2001, 13). Gosden and Lock (1998) discuss the theory of genealogical history – whether there was a remembered history between the Early Bronze Age barrow builders and those of the Late Bronze Age hilltop enclosure builders: 'at the beginning of the Late Bronze Age there could have been genealogical memory stretching almost back to the end of the Early Bronze Age. This could have been incorporated into the landscape of the Late Bronze Age first as memory, then as myth' (Gosden and Lock 1998, 8). Whilst there has been much discussion about the possible relationship between hillforts and older monuments, there has been little research done in Britain to actually quantify it. However, work has been done in Ireland to ascertain whether the Late Bronze Age hillforts there referenced older monuments. O'Driscoll (2017, 83) calculated that approximately 25% of Irish Late Bronze Age hillforts had cairns or mounds inside them, and a further 34% had an older monument such as a barrow or cairn in its immediate surroundings. He believed that by incorporating these earlier funerary monuments, the hillfort builders were making a symbolic attempt 'both to venerate the past and to legitimate power and control of the landscape' (O'Driscoll 2017, 83). This section will look at whether there is evidence that these British Late Bronze Age hilltop sites were deliberately built referencing past societies and a deeper ancestry or were placed on hills without any such links and were therefore making a break with their past by moving into new landscapes.

The localities of the Late Bronze Age hilltop sites were examined using the same Edina Digimaps method as AOD and water sources, with all the prehistoric monuments recorded on Ordnance Survey maps being recorded. The monuments would have to be obvious and above ground to be on the Ordnance Survey maps, therefore locations that have been shown to have older inhabitation by excavation, but do not have above-ground monuments that could have been seen by the Late Bronze

Age builders would not have been included in this study. This includes such sites as the Neolithic settlement at South Cadbury, Somerset (Alcock 1972) and Dinorben, Flintshire where evidence of Mesolithic and Neolithic settlement was found during excavation in the form of flint scatters and pits (Savory 1971a; Gardner and Savory 1964). Monuments that were obviously post-prehistoric were also excluded, and care was taken with those that could be either. For example, field systems, earthworks and hut circles were only included when they occurred in a landscape that was rich in prehistoric monuments, such as Bodmin Moor, Cornwall and where they could reasonably be expected to be prehistoric.

The analysis shows that the drive to build on hilltops that already had a cultural meaning was stronger in SW England than in Wales/Marches, with 43% of SW England sites already having older monuments on them, as opposed to only 23% of sites in Wales/Marches (Table 4.3). The chart for each individual cluster gives even more details (Fig. 4.21). These cluster groupings make it clear that in only two areas the presence of a pre-existing ancient monument is significant – Powys and Shropshire followed by Ceredigion. In all other cluster groups, this seems to not have been a significant factor when it came to choosing what hilltop to build upon. This contrasts sharply with SW England, where the pre-existing ancient monuments look to have been more important when siting the Late Bronze Age hilltop sites. However, as can be seen in Fig. 4.21, there is still considerable variance within the SW England study area.

	With existing monuments	**Without existing monuments**
Wales/Marches (n=26)	23%	77%
SW England (n=14)	43%	57%

Table 4.10 – Percentage of sites with and without existing monuments for both study areas.

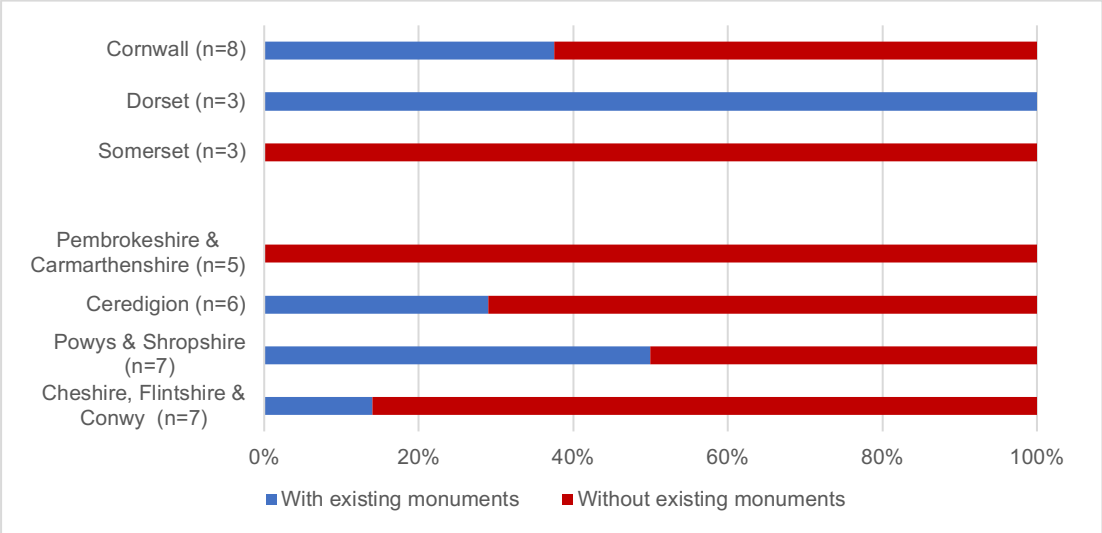


Figure 4.20 – Percentage of sites with and without existing monuments within each cluster.

A degree of regionality is obviously displayed here, for example none of the Somerset cluster are built on hills that contained ancient monuments, whilst all the Dorset ones have them. However, this does

not give the entire picture. There was ancient settlement in the landscape in Somerset; as already mentioned, South Cadbury had a Neolithic settlement on its summit (Alcock 1972) but there were no obvious traces of this left for the Late Bronze Age builders to see. In contrast, the hilltop sites in Dorset not only all have ancient monuments on them, but they also lie in a landscape heavily populated with them. For example, Chalbury has one Early Bronze Age round barrow inside the hilltop site, but is also surrounded by them. There are 16 on the ridgeline opposite, with another 23 within 2kms of the site. Poundbury has three round barrows inside the perimeter of the site. This whole area is invested with a long history, and the hilltop sites merely added another layer to this. By creating these sites in areas with so many ancient monuments, it is possible that the hills still held a special significance for the builders, and that the hilltop sites were serving a similar purpose to the older round barrows: “the need to reinforce identity and ownership can be traced back in the Bronze Age to the positioning of round barrows. Most are on high ground in prominent positions ….. and indicate a desire to use substantial monuments to affirm presence and presumable rights to land” (Jackson 1999, 207). However, there is also the possibility that no real selection was at play here, that in such a busy Bronze Age landscape, by the Late Bronze Age it was hard to find a hill that did not already have a monument built on it.

The type of pre-existing ancient monument present on the hills is also interesting (Fig. 4.22). There is much more of a spread in SW England, with a more diverse group of ancient monuments present. In Wales/Marches, the vast majority of pre-existing ancient monuments are Early Bronze Age round barrows (which will make up the bulk of the tumulus/cairn type). The only other type of earlier monuments present in Wales/Marches are those which were probably not associated with ritual, such as hut circles and field systems, whereas in SW England there is a more sacred feel with Neolithic long barrows and causewayed camps. The choice of landscapes being utilised could therefore be significant, with. Wales/Marches favouring ancestral burial landscapes, whereas the communities in SW England preferring a much more rounded choice of ritualistic landscape. Although they would not have been aware of the exact degree of antiquity of these monuments, causewayed camps and long barrows are Neolithic in origin, with the rest of the monument types probably being Early Bronze Age. This shows a greater pre-occupation with referencing the past in these areas, ‘the anthropogenic features that punctuate a landscape are not only those of contemporaneous date, but also include any older features that form part of the worldview of the inhabitants’ (Brück and Goodman 1999, 7). The worldview in SW England seems to very much include these more ancient features, whilst in Wales/Marches there seems to be more of an attempt to look forwards, not backwards when siting these hilltop sites. This may be a definite wish to break with the past, or a vague feeling that it didn’t matter so much, hence the use of fewer hills with pre-existing monuments. There is always the possibility that many hilltops had not yet been deforested, meaning that no older monuments had yet to be built there, however, forested hilltops could have occurred in either study group, which still leaves the fact that they showed different patterns.

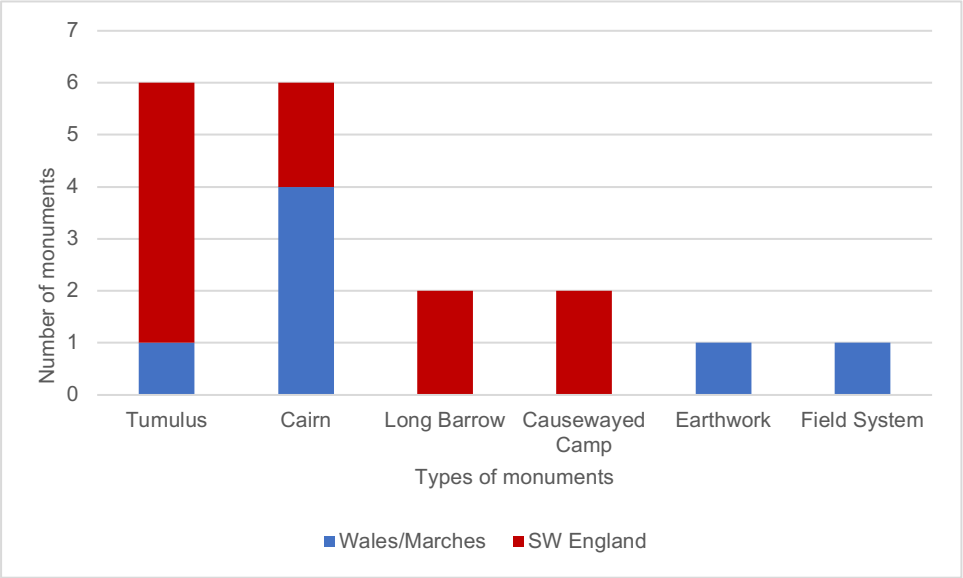


Figure 4.21 – Numbers of pre-existing ancient monuments on hilltop sites in both regions.

It is also important to reflect on what the building of these new types of monument in an area with little previous occupation might have meant. All choices made by individuals and societies are made for a purpose, and therefore it stands to reason that these predominantly empty hills were built upon with a particular imperative in mind. It may have been the moving into of a new landscape, colonising areas with strategic value such as riverine and coastal locations important to travel and trade. Society was under great pressure during the Late Bronze Age; as outlined in Chapter Three, the Late Bronze Age seems to have been a time of flux. The end of the Bronze Age was marked by changing climatic conditions, a change in the settlement record, a peak in the production of bronze items and a spike in the deposition of bronze artefacts (Bradley 1984; Brück 2007; Needham 2007; Pope 2015).

> ‘Transitions of one kind or another are a perpetual feature of human history and so it must be asked, can the bronze-iron transition be seen to involve a more profound change in material culture, social attitudes and social structure?’
>
> (Needham 2007, 39)

Could it be that in the Wales/Marches region, this social flux led to fragmentation of existing communities leading to this move into new landscapes largely unmarked by previous populations? Evidence for settlement in this area is far less forthcoming than in other parts of England, such as the Thames Valley (Yates 2007, 2007a). In his 2011 PhD, Halstead examined the evidence for settlement from the Late Neolithic to the Late Bronze Age in the central Welsh border area and concluded that there were very few indications of settlement sites other than hillforts in the Late Bronze Age in this area (Halstead 2011, 77). He also examined the chronological evidence for the field systems detected within this region, for example on the gravel terraces on the edges of the River Vyrnwy and River Severn floodplains, those in the NW of the region at Llanymynech and to the west of The Breiddin hills. He concluded that although difficult to definitively place within a chronological scheme, the evidence does seem to suggest a Late Iron Age or Romano British date for non-hilltop settlements in this area. A field

system located outside of The Breiddin has no evidence to suggest it was contemporaneous with the Late Bronze Age activity on the hilltop and was probably later (Halstead 2011, 196; Wigley 2007, 181). Although it is true to say that maybe the settlement evidence has just not yet been found, there has been extensive excavation in the region, so it might be possible to say that this had been a less settled landscape. This, coupled with the lack of pre-existing monuments of the hills chosen by the hilltop site communities could indicate a population keen to move in and colonise an area that had been previously more lightly settled.

Maybe the changes affecting society throughout the Late Bronze Age in Wales/Marches did not drive these communities to seek affirmation through links with their shared past. It may have been that these societies positively sought out hills that were a 'clean slate' in order to assert their dominance over new areas of land. There is also the possibility that there was neither positive nor negative decisions being made about where to site these hilltop sites in terms of the ancient past, that the earlier monuments simply were not as prevalent in this landscape as within those in SW England. However, this seems unlikely when one examines the density of earlier monuments in the area. For example, in a narrow strip of the Welsh Marches stretching from Oswestry to Hay-on-Wye, a 2004 mapping exercise for English Heritage counted 11 Neolithic monuments of a ritual or funerary nature (including long barrows, henges and a cursus), and 173 Bronze Age barrows (Stoertz 2004). This landscape did not have the density of earlier monuments that for example Dorset does, but it still had enough pre-existing monuments to be significant. This strengthens the argument that a positive decision was being made to not build on the hills that showed links to previous generations in these areas.

4.6 DISCUSSION

This chapter has started to build up a picture of the types of locations that Late Bronze Age communities were choosing for their new hilltop enclosures. What exactly have we learned so far? Whilst only the landscape element of hilltop sites has been examined, tantalising glimpses can be seen of differing choices made in the selection of hilltops to develop by individual communities. Could we be seeing elements of shared cultural identities across the different case study areas examined here?

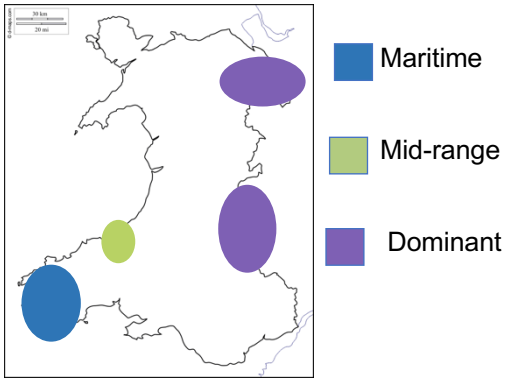
4.6.1 Wales and the Marches

This is by far the larger of the two regional groupings but is reasonably homogeneous in its topography. It is characterised by large areas of mountainous or hilly terrain, punctuated by river valleys. There are, of course, differences on a smaller scale, but taken as a whole it is fairly homogeneous. As illustrated in Fig. 4.24, there are areas within this region that have shown a marked preference for building on particular types of terrain. The Cheshire, Flintshire and Conwy and Shropshire and Powys cluster groups both seem to have hilltop sites built on more dominant terrain. These two groups are topographically similar and geographically close, so it may be that a cultural preference is being seen here. What is more interesting is that another topographically similar area, but one slightly more geographically distant, that of Ceredigion, does not build upon dominant hills but on mid-range ones. This area has hills of a similar, if not higher height as the first two, but the Late Bronze Age hilltop sites

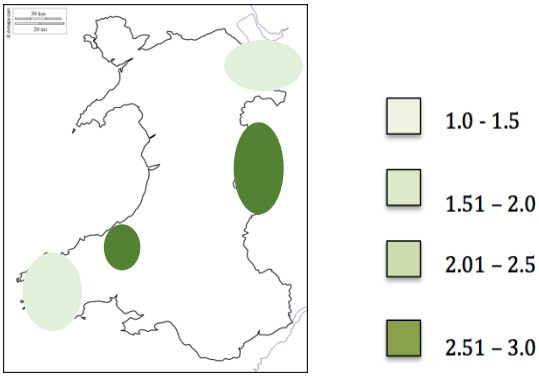
in this area are not built on these higher hills, rather those in the middle of the range. The last Welsh cluster group, that of Pembrokeshire and Carmarthenshire, is coastal and promontory in nature and, as such, forms a coherent group.

The water analysis has shown that, although Wales/Marches as a whole have a higher number of water sources than SW England, there are still variations within the groups. The number of different water sources averaged over the cluster group range from 1.9 per hilltop site for the Cheshire, Flintshire and Conwy group up to 2.7 for Powys and Shropshire (Fig. 4.24). The two most similar groups when looking at AOD are slightly more divergent with regards to water sources, with Pembrokeshire and Carmarthenshire at 2.4. Therefore, it appears as if the availability of multiple water sources seems to have been most important to the two groups that are topographically similar, but not geographically contiguous. Are any of these similarities reflected in the third strand of analysis? As previously shown, the building of hilltop sites on hills already used by more ancient communities is less common in Wales/Marches than SW England. As with the water analysis, the two groups with the highest percentage of sites built on hills with pre-existing monuments are Powys and Shropshire at 50% followed by Ceredigion at 29%. The closest geographic grouping, Cheshire, Flintshire and Conwy is significantly lower at 14%, with Pembrokeshire and Carmarthenshire having no pre-existing sites.

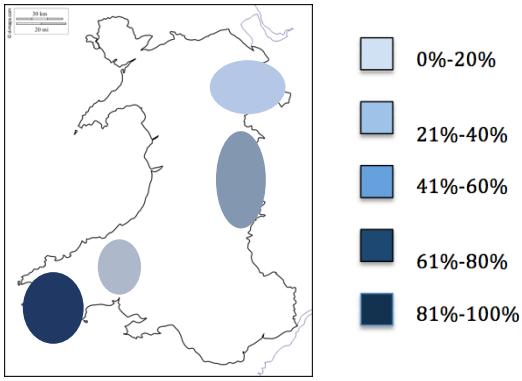
Therefore, there seems to be tentative similarities that could have cultural origins beginning to be seen within some of the Wales/Marches regional groupings. The strongest seems to be between the Powys and Shropshire and the Ceredigion groups. They are very similar in the amount of water sources and pre-existing ancient monuments on these hilltops. However, they do differ when it comes to the broad topographical category. Here, there is more similarity between Powys and Shropshire and Cheshire, Flintshire and Conwy. Nevertheless, these three groups do have much that is broadly comparable, which may signify similar decisions being made when considering the building criteria. What is obvious, however, is that the Pembrokeshire and Carmarthenshire cluster is very different from the rest of the region in every category. With their maritime aspect and being promontory in nature, their raison d'être seems to be very different from the inland, upland sites.



AOD by landscape type



Number of multiple water sources at hilltop sites



Percentage of hillforts within each region with pre-existing ancient monuments

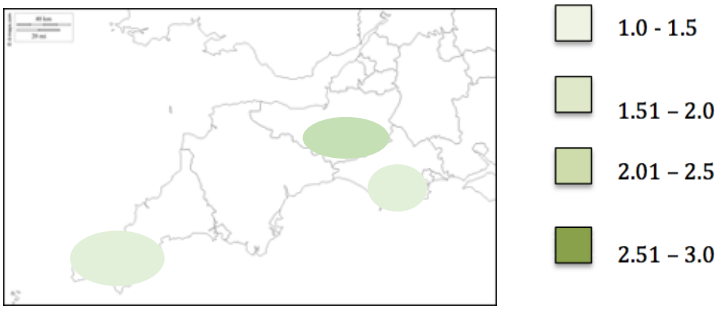
Figure 4.22 – Diagrammatic results of AOD, water source and pre-existing ancient monument analysis in Wales/Marches.

4.6.2 SW England

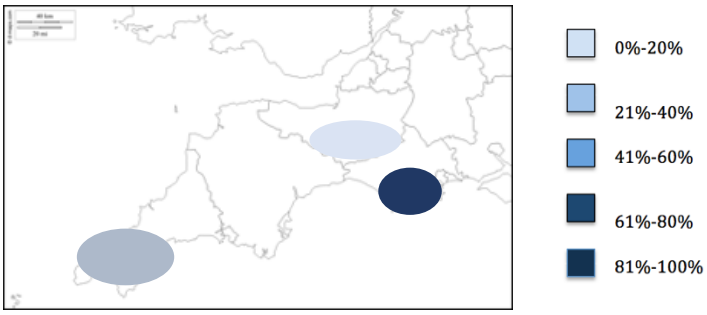
SW England has shown some marked differences with the Wales/Marches region; it is a smaller sized group overall with 14 sites as opposed to 26, however, it has shown some interesting results. The AOD analysis for this region is somewhat mixed, both Somerset and Dorset have no over-riding type and are best described as mid-range. The interesting part lies within Cornwall. North Cornwall, based around

Bodmin Moor, is in the dominant group whereas south Cornwall, centred around (but not exclusively on) the West Penwith Peninsular is the coastal, promontory type. Although geographically very close, there seems to be two vastly different typologies at work here. The water analysis does not really help to illuminate the differences. As already stated, the types and amount of water sources in SW England are significantly lower and show no real differences. The number of multiple water sources per site are not vastly different (2 for Somerset; 1.7 for Dorset; 1.9 for Cornwall). Although there is also no real uniformity when it comes to the pre-existing ancient monuments, taken as a whole it is noteworthy that there are areas within this region where referencing more ancient communities does seem to have been of great importance to these hilltop site builders. As illustrated in Fig. 4.25, none of the Late Bronze Age hilltop sites in Somerset have any older monuments that can be seen above the ground, 100% of the Dorset ones do, with 37.5% in Cornwall. During these times of change, the need to draw links with past generations and lay claim to their lands may well have been strong; 'places had names, associations with persons, ancestors, lineages and communities and their actions' (Gerritsen 2007, 339). This may well have been the case in these SW England groups. The instability brought on by outside factors may have driven these communities to reaffirm their own identity and place in the world by digging deep into their shared communal past – best illustrated by building their new hilltop sites in places bearing the very real traces of their ancestors and endorsing their place in the world.

AOD by landscape type



Number of multiple water source



Percentage of hillforts within region with pre-existing ancient monuments

Figure 4.23 - Diagrammatic results of AOD, water source and pre-existing ancient monument analysis in SW England.

4.6.3 Coastal communities

The two groups that seem to show the most similarities are the coastal groups in the two regions (Fig. 4.26). The height above sea level for the Pembrokeshire and Carmarthenshire and south Cornwall groups are broadly the same, as they are both sited on the coastline as promontory forts. Both groups favour water sources within 1km and do not seem to find referencing the older monuments as important (in Pembrokeshire and Carmarthenshire there are no ancient monuments, and in south Cornwall only two out of five do). What makes these similarities more interesting is that both their geographically closest groups are very different. The two north Cornwall hilltop sites are built at the top end of hills in their area. The nearest group to the Pembrokeshire and Carmarthenshire group, Ceredigion, have hilltop sites built in the mid-range of their landscape, and 27% of the group have an ancient monument, the second highest proportion in the Wales/Marches region. This suggests that these may be geographically close but culturally separate communities whose choice of hills to build these hilltop sites reflects a different set of imperatives.

Cultural similarity is often assumed to be driven by geographical affinity; that communities that are close to each other are bound to be sharing ideas between themselves simply by virtue of their geographical closeness. However, this conclusion is not necessarily being borne out by these findings. Although there does seem to be some similarities between inland cluster groups within the Wales/Marches group, this is not seen between the coastal groups and their nearest inland neighbours. These two groupings seem to show very different decisions being made with regards to the siting of these hilltop sites, with the main cultural similarities being between the two coastal communities. The geographical positioning of these two coastal groups may help to explain why this affinity is being seen. They virtually face each other across the Bristol Channel, so would have been accessible via sea routes. It is possible that these two coastal groups had much more cultural inter-connection than their nearest inland neighbours. Henderson (2007a, 314) considered that ‘the settlement patterns in the peninsular of southwest England and southwest Wales have much in common and can be considered together’. The sea route across the Bristol Channel will have been more conducive to communication, whether it be through trade or the movement of people and ideas, than the more arduous inland routes. There has been much

work done on the interconnectivity of the western sea routes of this Atlantic region (Cunliffe 2013; Henderson 2007a, 2007b). Widespread trading throughout the Atlantic Maritime zone has been studied for some time, for example Middle Bronze Age shipwrecks off the English coasts found full of items made in France (Muckelroy 1981). The question is 'whether the shared experience of living along the Atlantic Seaboard united communities at a broad level conceptually or if not (at all times) physically' (Henderson 2007a, 1). The conclusions formed within this chapter do seem to support the hypothesis that there was more of a degree of interconnectivity between these maritime communities than the inland communities around them.

Figure 4.24 – Coastal Late Bronze Age promontory enclosures in SW Wales and SW England (Map data 2021 © Google).

4.7 CONCLUSION

What has been set out in this chapter begins to build up a picture of why social groups may be coming together to enclose these hills; a picture that will develop as this thesis progresses. However, interesting patterns are already emerging. The most striking is the close parallels seen within the two coastal communities facing each other across the Bristol Channel. These are significantly different to all the other cluster groups but are very similar to each other. It may show a shared cultural imperative reflected in the siting choices made by these two groups. Although this is the strongest example to be identified, others can be seen. Referencing the ancestors seems to have been much more significant to most of the groups in SW England. Within the Wales/Marches groups, Cheshire/Flintshire/Conwy, Powys/Shropshire and Ceredigion all show marked similarities. The selection of sites being made by these groups; with higher hills, good access to a range of water sources and riverine locations, and with less referencing of more ancient occupation would seem to signify choices, perhaps based on communities moving into new landscapes with the intention of raising livestock. What needs to be developed now is an analysis of the settlement evidence and material culture of all these hillfort groups. By doing this, the understanding of what was happening on these LBA hilltop sites should increase and

more firm conclusions will be reached as to what was changing in society at this pivotal moment in later prehistory that led to the development of hilltop sites.

CHAPTER FIVE

SETTLING LATE BRONZE AGE HILLTOP SITES

5.1 WESTERN SETTLEMENT EVIDENCE

5.1.1. Problems with data quality on hilltop sites

The tables detailing out the Late Bronze Age evidence found on hilltops in the Atlantic west of Britain set out in Chapter Four highlights the differences in both quality and quantity of evidence from these sites. There are potential problems with the data quality from some of these sites. Excavations carried out at the very beginning of archaeological practice could have missed some of the more ephemeral evidence such as stake-built structures. As already discussed, the radiocarbon samples from some of these older sites would not be accepted today, making them less useful for modern analysis. The placement of excavation trenches solely across ramparts means that possible areas of activity have been completely missed. As demonstrated at Beeston Castle, much of the Late Bronze Age activity took place just within the entrance. If these areas have not been explored, the full picture of the site would not have emerged. This is especially important when considering the possibility that there were pre-enclosure activities taking place on hilltops as these can generally leave only ephemeral traces. If these traces have not been found, dated or even looked for, or if they had already been largely destroyed by later activity, it might never be possible to recreate a full picture of activity on these hilltops. The possible damage done to these sites due to later activity may also have eroded any evidence present. The flat area of the interior of some hilltop enclosures makes them ideal for modern farming activities. Heavy ploughing for crops can destroy occupation evidence, and even if they are not deep ploughed, the presence of crops and/or herds may deter landowners from allowing a thorough exploration of the site. However, notwithstanding these limitations, it is possible to carry out meaningful analysis of the data present.

5.1.2 Settlement evidence in the Atlantic west of Britain

As detailed in the Methodology chapter, the evidence for settlement on hilltop sites in the Late Bronze Age has been subdivided into five categories: enclosure, structural evidence, occupation evidence, craftworking and agriculture. Before looking at each category in detail, it is useful to examine the percentages of sites within each study group that have each category of evidence present (Fig. 5.1). Looking first at the hilltop settlement groups, the differences are interesting. Wales/Marches have a higher percentage of sites with settlement evidence in every category. When you consider the evidence for water sources available to hilltop sites detailed in Chapter Four (Fig. 4.18), the fact that Wales/Marches has a markedly higher percentage of water sources available ties in well with the higher percentage of occupation evidence found at these sites – people and animals need water to live in such places. This suggests that the sites were being used differently in the two different case study areas, with occupation and craftworking being more important in Wales/Marches as opposed to SW England. Compare this with the non-hilltop site group and the differences are even starker. Every category is

significantly higher in the non-hilltop sites, with only enclosure lower (40% as opposed to 50% and 43%). It is possible that the higher percentages in the non-hilltop sites might be partly explained by differences in preservation; a number of these important sites were investigated as a result of developer-funded excavations and whilst a large number of hilltop sites have had some form of excavation, in many cases this took the form of rampart sectioning, with much less excavation taking place in the interior (Cunliffe 2005, 349), and many have had no excavation at all. Table 5.1 details the quality of evidence for all three case study groups, and the difference between the non-hilltop sites, which are mainly developer driven excavations, and hilltop sites is plain. However, it is just as likely that these differing percentages reflect the variant site uses. Therefore, it is necessary to look closer at the details to try and ascertain whether the enclosure evidence can inform the discussion about what role these hilltop sites played in the Late Bronze Age.

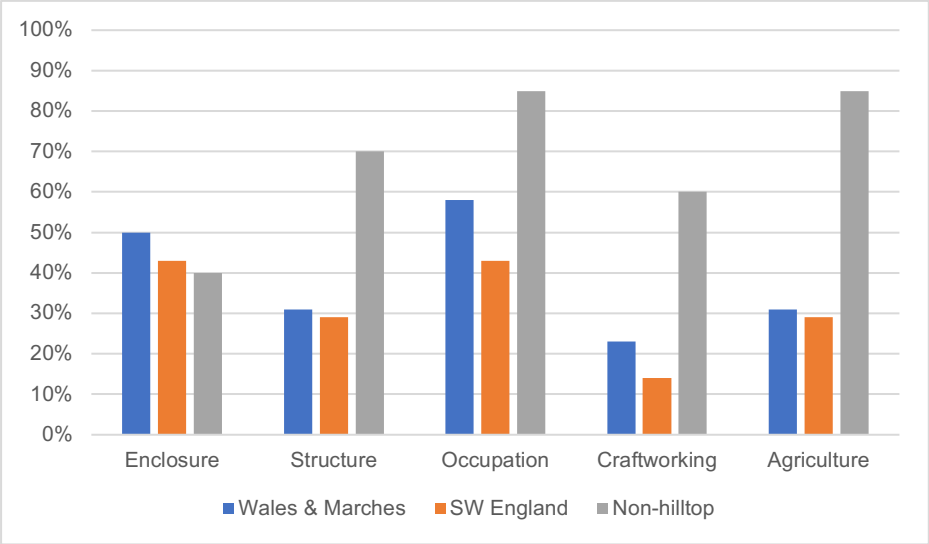


Figure 5.1 - Percentage of sites with settlement evidence by type for all case study areas.

	Excellent	Good	Fair	Poor
Wales & Marches (n=16)	12%	19%	50%	19%
SW England (n=14)	7%	21%	29%	43%
Non-hilltop (n=20)	55%	45%	-	-

Table 5.1 – Quality of evidence for all three study groups.

5.2 BUILDING ON HILLTOPS – ENCLOSURE AND STRUCTURES

5.2.1 Enclosure

Cunliffe (2005, 50) states that whilst hillfort building began around 800 BC, the tradition of enclosing hilltop sites or partially enclosing large areas of uplands by using earthworks can be shown to date back

well into the second millennium BC. He was writing specifically about southern Britain, and whilst he states that in this region hillfort building began *c.* 800 BC, this section will discuss the evidence for hilltop sites being enclosed and utilised much earlier in the Late Bronze Age in both Wales/Marches and SW England. Enclosure can take several different forms – the most obvious today being ramparts, but palisades (that is a strong fence made up from wooden stakes, forming an enclosed area), ditches and walls are also evidence of enclosure. A rampart is generally a freestanding earthen embankment structure surrounding a site, which is artificially raised from around the surrounding area, possibly supporting a wall. It differs from a bank in that a rampart will normally have interior and exterior revetment, with internal timbers and/or drystone walling supporting the structure. A bank is normally just an earthen mound without internal structure, often constructed from the waste material accumulated from a ditch (Burke 2008, Guilbert 1975). Whilst it may be argued that a rampart and ditch is merely the same as a bank and ditch built around a lowland site, just bigger and more visible, this a false equivalence. The amount of work required, often in challenging upland environments, signifies a determination to create something more than a bank and ditch. A rampart is more visible, being on the summit of a hill, and presents an observable statement in the landscape that can be seen from a considerable distance. Even a palisade, whilst not as visually impressive and maybe not as obvious on a wooded hillside, uses a huge amount of good timber and therefore also presents as a noteworthy monument. A bank and ditch surrounding a lowland settlement, whilst impressive, cannot compare with the visual impact a rampart or palisade can make.

Some sites such as Beeston Castle, Cheshire have evidence for both palisades and ramparts, along with other settlement evidence that seems to show that this site had been well-developed in the Bronze Age (Ellis 1993). However, sites such as Llwyn Bryn-Dinas, Powys only have evidence for ramparts with no other occupation evidence present (Musson 1992), which could suggest that this site was used for pastoral activities such as stock control rather than human settlement. Fig. 5.2 details the methods of enclosure for each of these study areas, showing interesting results. In Wales/Marches, ramparts and palisades are almost equal in their occurrence. However, in SW England ramparts dominate with none of the sites having a palisade (or have had palisades identified), but there are more varied methods of enclosure present such as banks and ditches. Within the non-hilltop settlement site group construction methods are even more diverse; having no ramparts present, but five different types of enclosure identified (palisade, ditch, bank, fence and wall). These figures serve to reinforce the fact that enclosure was most important in the Wales/Marches group, although it must be stressed that not all sites had evidence of enclosure.

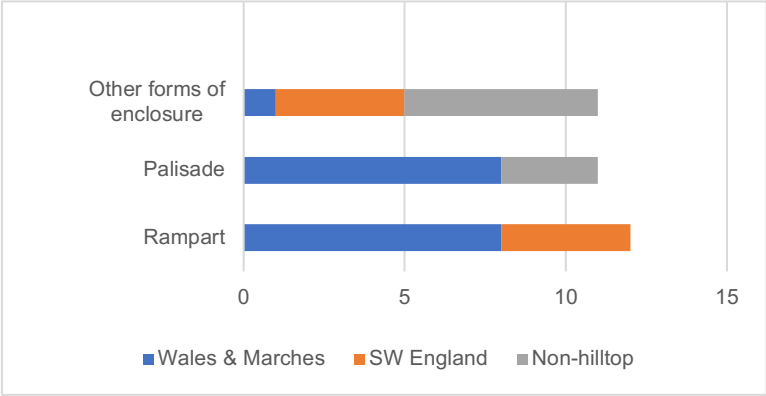


Figure 5.2 – Numbers of different forms of enclosure present in case study areas.

5.2.1.1 Unenclosed activity

As already shown (Fig. 5.1), Late Bronze Age enclosure has been found in 50% of the Wales/Marches case study area, 43% of SW England case study area and in 40% of the non-hilltop settlement type group. It is therefore worth noting that roughly half of hilltop sites do not have evidence of any form of enclosure dating to this time. Whilst this may be because the sites were not in fact enclosed, it may also be because this early evidence was lost during development of the site in the Iron Age, or has not yet been found, either through a lack of excavation, or because of a small sample area. Therefore, whilst enclosure was the most common form of settlement evidence found in the two case study areas, it is by no means universal.

5.2.1.2 Palisaded enclosures

When it comes to methods of enclosure, it is generally contended that one of the earliest methods is the use of palisades (Ralston 2006, 46). Peggy Piggott constructed the *Hownam Sequence* after excavating Hownam Rings, in the Scottish Borders in 1948, describing an evolution from palisaded enclosure to earthwork enclosure, then developing from univallate to multivallate structures (Fig. 5.3) (Armit and McKenzie 2013, 12; Harding 2001, 356; Piggott 1948). Whilst this model worked well at that time, this progression was subsequently challenged, with sites such as Corsehope Rings, Midlothian seeming to have palisades cutting through earlier earthworks (Feachem 1963; Halliday 2013), and Broxmouth Hill, East Lothian, having a 'complex sequence of enclosure which seemed to contradict even the basic principles of the Hownam model' (Armit 1999, 70). This sequence was further challenged when excavation at some of Scotland's largest hillforts previously interpreted as later regional centres, such as Traprain Law, East Lothian and Eildon Hill North, Borders were shown to be amongst the earliest, dating to the Late Bronze Age (Armit 1999, 74; Owen 1992). It now seems that whilst, in general 'wherever excavation has been adequate, palisades, if they occur can be shown to precede earthwork defences' (Cunliffe 2005, 349), this is by no means universal, and considerable local complexity can occur.

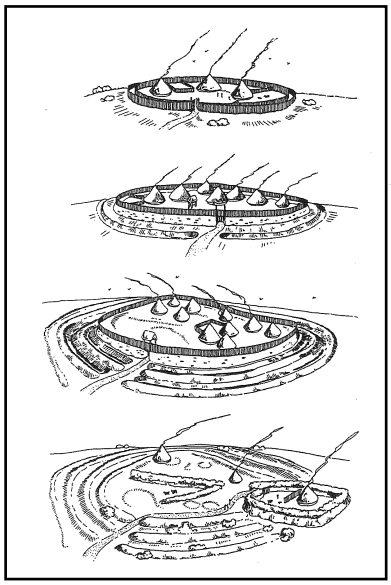


Figure 5.3 – The Hownam model: a simplified version of the sequence. (Armit and McKenzie 2013, 12).

In Wales/Marches, evidence for palisades can tentatively be shown at a number of sites, detailed in Table 5.2. Only three of the sites: Beeston Castle, Eddisbury and Bryn Maen Caerau, have good evidence of palisades, two of them dating between the 13th and 9th centuries BC. The evidence from the other sites is more tentative - having less secure dating evidence, and being more open to interpretation, however, they do all seem to suggest a general Late Bronze Age date. As has been shown, evidence for palisades is, by their very nature, more difficult to prove than that for ramparts. At a number of sites in Wales/Marches, however, it seems that palisaded enclosures existed prior to later ramparts (Table 5.2), in keeping with Cunliffe's general contention that palisades preceded ramparts (Cunliffe 2005, 349). By contrast, no palisades have been excavated in the SW England case study area, but two have been identified at non-hilltop settlement sites: Scarcewater, Cornwall, radiocarbon dated to *c.* 875 *cal* BC (Jones and Taylor 2010, 35) and Eldon's Seat, Dorset, (Cunliffe and Phillipson 1968, 199). Where the dates are known, these palisades are later than those in Wales/Marches and unlike a number of palisaded sites in Wales/Marches that were subsequently replaced by ramparts in the Late Bronze Age, the palisades at these non-hilltop settlement sites were not replaced by more elaborate defences. The absence of ramparts in lowland settlements makes it more likely that ramparts developed on the hilltop sites for a specific reason associated with their upland location and the part they were to play within the communities that created them.

Site	Dating evidence for palisade	Evidence	Reference
Beeston Castle, Cheshire	1266 – 836 cal BC	Possible palisade found near scarp edge either side of Outer Gateway. Two other possible locations pre-date LBA rampart. Fig. 5.8 shows the palisade postholes and trenches at Beeston Castle	Ellis 1993, 21
Bryn Maen Caerau, Ceredigion	LBA contexts	Two palisade trenches 3.4m apart with regular sides and flat bottom. Dated to LBA by overlying occupation layer having EIA dates.	Williams 2001, 14

Dale Fort, Pembrokeshire	976-811 cal BC	Sequence of palisade trenches succeeded by ramparts in LBA context.	Davies & Hogg 1994, 224
Dinorben, Conwy	LBA contexts	Possible palisade trench with occupation layer occurring behind it.	Savory 1971a, 10
Eddisbury, Cheshire	1210-1088 cal BC	Palisade trench identified on Merrick's Hill site.	Mason and Pope 2016, 205
Ffridd Faldwyn, Powys	LBA contexts	Double line of small postholes running under IA rampart, dated by discovery of penannular ring of secure LBA date.	O'Neil 1943, 10
Moel y Gaer, Rhosesmor, Flintshire	LBA contexts	Palisade slot, with hut nearby, assumed contemporaneous and dated to *c.* 820 cal BC.	Guilbert 1975, 115. Stanford 1980, 81.
Old Oswestry, Shropshire	LBA contexts	Palisade gully forming a pre- rampart enclosure. Very similar to nearby LBA sites of Dinorben, Ffridd Faldwyn and Eddisbury.	Hughes 1994, 81-84.
The Breiddin, Powys	LBA contexts	Possible evidence for double palisade bedded into shallow bank dating to 9th/10th century BC. Excavator believed palisade existed beyond the limit of his excavation	Musson *pers comm,* Cunliffe 2005, 349

Table 5.2 –Palisade evidence in Wales/Marches study group (this does not include the palisades excavated at Castell Odo and Meillionydd).

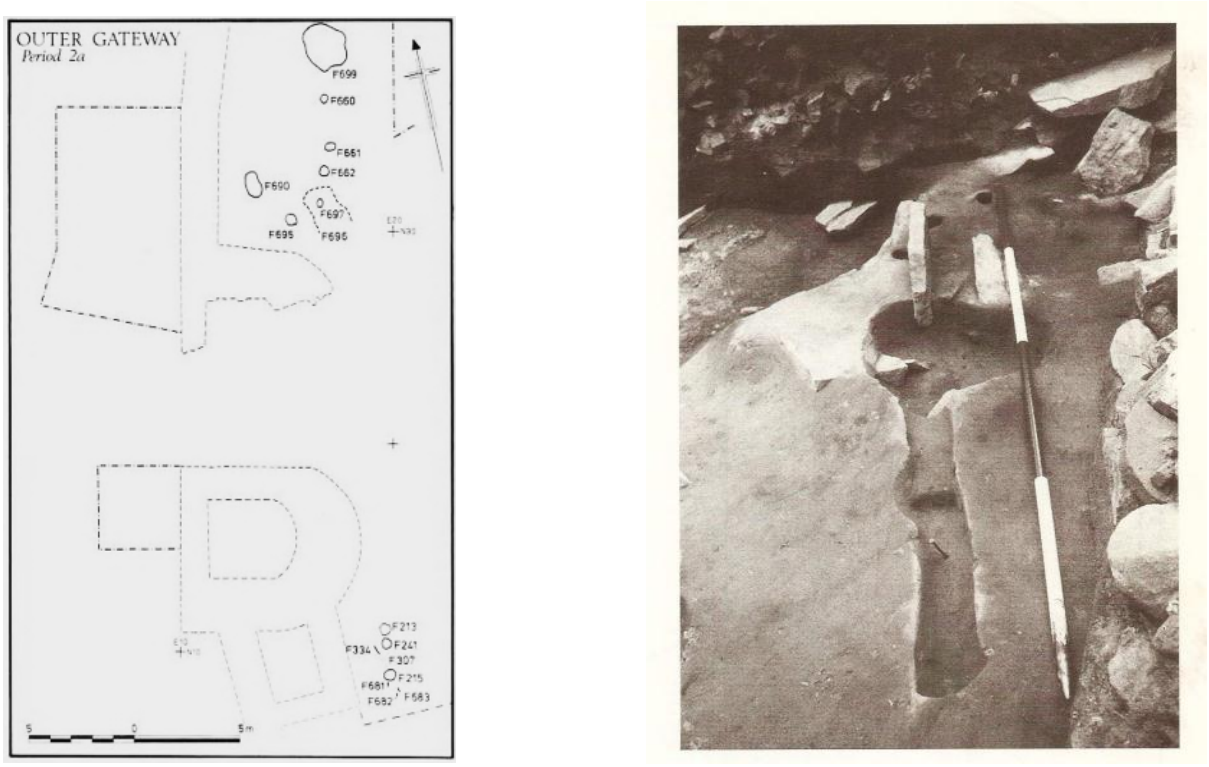


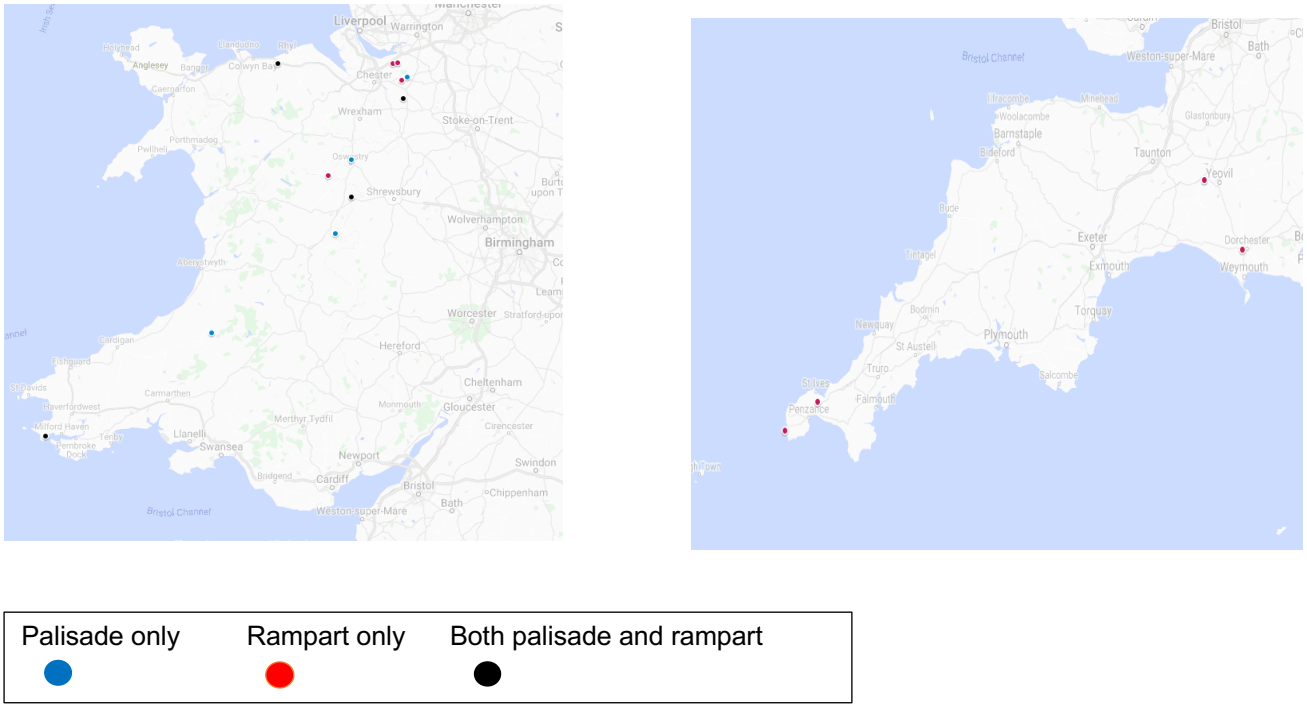
Figure 5.4 – Palisade trench and postholes at Beeston Outer Gateway. (Ellis 1993, 21).

5.2.1.3 Ramparts

Ramparts are the most visible of enclosure methods, and the most conspicuous element of these monuments to survive to the modern day (Ralston 2006, 9). They would have placed the greatest demands onto the communities constructing them both in terms of human effort and resources. Of the sites that have produced palisades, a number went on to then develop ramparts within the Late Bronze Age (Table 5.3 and Fig. 5.5). The rest of the palisade-only sites subsequently went on to have ramparts built in the Early Iron Age, although it is possible that there was a considerable amount of time between the two events. From the evidence we have, a number of hilltop sites constructed ramparts without first going through the preceding phase of palisade building. It has to be noted however, that it is entirely possible that palisades did occur but have not yet been located. Where ramparts have been excavated, many were dug before the 'subtleties of internal timber-work were understood' (Cunliffe 2005, 349), and therefore may not have yielded evidence of building methods. Sufficient numbers have now been excavated well enough, however, to provide useful evidence.

Palisade only		Ramparts only		Both	
Site	**Dating Evidence**	**Site**	**Dating Evidence**	**Site**	**Dating Evidence**
Eddisbury	C^{14} 1210 – 1088 *cal* BC	Helsby	C^{14} 1293-1091 *cal* BC	Beeston Castle	C^{14} 1145-929 *cal* BC
Bryn Maen Caerau	C^{14} 776-598 *cal* BC	Poundbury	C^{14} 1080 *cal* BC	Dinorben	C^{14} 1188-901 *cal* BC
Old Oswestry	LBA material culture	Kelsbarrow	C^{14} 992-904 *cal* BC	The Breiddin	C^{14} 1072-776 *cal* BC
Ffridd Faldwyn	LBA material Culture	Woodhouse	OSL 891 BC	Dale Fort	C^{14} 976-811 *cal* BC
		Ham Hill	LBA material culture		
		Trencrom	LBA material culture		
		Maen Castle	Typological similarities		
		Llwyn Bryn Dinas	LBA material culture		

Table 5.3 – Sites with ramparts and/or palisades in both Wales/Marches and SW England study area.



Palisade only | Rampart only | Both palisade and rampart

Figure 5.5 – Map of sites with palisades and/or ramparts in both study areas. © Crown Copyright and database rights 2020 Ordnance Survey.

The ramparts in these study areas are simple box ramparts which Cunliffe (2005, 351) called *The Ivinghoe Beacon style of timber strengthening,* dating the type from the 12th to 6th centuries BC, putting it at the start of hillfort rampart construction (Fig. 5.6). Similar ramparts are also seen at Rams Hill, Berkshire (Needham and Ambers 1994), Ivinghoe Beacon, Buckinghamshire (Brown 2001) and Grimethorpe, Yorkshire (Dymond and Stead 1959). The evidence for both study areas is summarised in Table 5.2, however there is good evidence from a number of sites for ramparts in both study areas showing the importance of hilltop enclosure during this period. The Breiddin in particular has over 60m of well-constructed rampart that enclosed over 28 hectares (Musson 1991), making this the best evidence within all study areas for a strongly defended site, probably developing from palisaded enclosure to ramparts within the Late Bronze Age (Fig. 5.7). However, the line of this early rampart wandered in several places prompting Musson (1991, 176) to suggest that it could indicate gang-working. The amount of human effort needed to build these hilltop enclosures indicates the significance communities placed of creating these enclosed spaces; the evidence from The Breiddin could support this with the possibility of several local groups coming together for communal building activities (Brück 2007, 28). This would fit in well with our increasing understanding of the intensification of agriculture during the Late Bronze Age, especially within pastoralism and the control of stock. Communally created spaces that could hold large numbers of people and animals at certain times of the year would indicate the importance of such activities within society at this time.

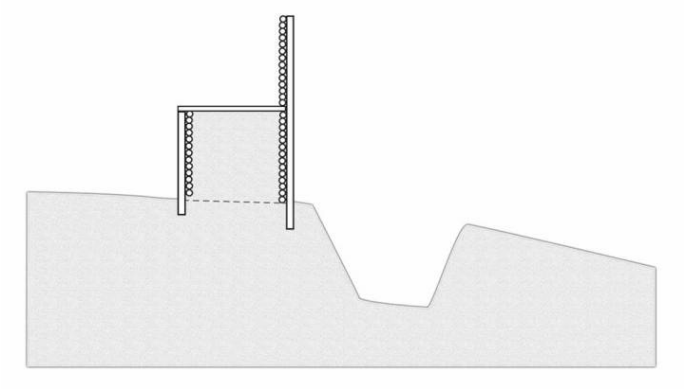


Figure 5.6 – Example of a box rampart based on Ivinghoe Beacon (Rothwell 2014)

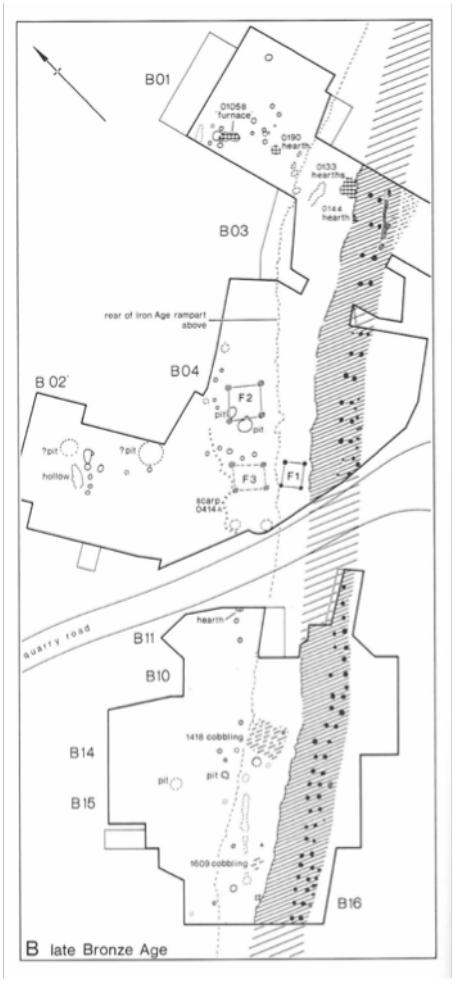


Figure 5.7 – The Breiddin: Excavation of LBA rampart (Musson 1991, 20).

Site	Dating evidence for rampart	Description	Reference
Wales and Marches			
Beeston Castle, Cheshire	1145-929 *cal* BC	Base of stones and boulders with main deposit of sand on top. Possible timber lacing.	Ellis 1993, 88-90
Dale Fort, Pembrokeshire	Overlaying occupation layer dated to *c*. 810-780 BC	Series of palisades, banks and a stone revetment.	Benson and Williams 1987
Dinorben, Conwy	1188-901 *cal* BC	Revetted timber-laced clay rampart, 4m thick. Alternate layers of timber staging and clay / rubble.	Savory 1971, 9
Helsby, Cheshire	1193-1091 *cal* BC	Early example of simple box rampart	Garner 2016, 136
Kelsbarrow, Cheshire	992-904 *cal* BC	Simple box ramparts	Garner 2016
The Breiddin, Powys	Several C14 samples along length suggest construction date between 9-8th centuries BC, although it has C14 dates from 1011-796 *cal* BC	Excellent evidence for a rampart 60m in length enclosing 28 hectares (Fig. 5.12).	Musson 1991
Woodhouse, Cheshire	OSL, central date 891 BC	Simple box ramparts	Garner 2016
Southwest England			
Ham Hill, Somerset	LBA pottery	First phase of rampart construction – dump of rubble and clay with rear revetment.	Brittain et al. 2012, 43
Maen Castle, Cornwall	LBA pottery found in rampart	No investigation	Herring 1994
Poundbury, Dorset	No dating material rampart 1, rampart 2 has pottery from MBA-EIA, suggesting an LBA date for its construction	Primary dump constructed inner rampart surrounded by second rampart of different construction.	Green 1987, 36
Trencrom, Cornwall	LBA pottery found in rampart	No investigation	Herring 1999

Table 5.4 – Rampart evidence in Wales/Marches and SW England.

5.2.1.4 Other forms of enclosure

The other forms of enclosure include ditch, bank, fence-lines and walls (Table 5.5). In Wales/Marches, where ramparts and palisades dominate, the only other type of enclosure occurring are defensive ditches which also occur in SW England, where there is at present no evidence for palisades. Ditches can serve similar purposes to a palisade, both in terms of defence and stock control, and large-scale ditches take a great deal of effort to construct. Therefore, these earthworks can be viewed in much the same way, as a community level activity to benefit that community. There is more diversity within forms of enclosure in the non-hilltop settlements, with two palisades (Scarcewater and Eldon's Seat) known as well as banks, ditches, fences and walls. However, this diversity of enclosure types at non-hilltop sites is more indicative of the varying site functions, from middens to specialist fishing locations (Table 2.2). These are probably more functional enclosures, which although take effort, lack the monumentality

of hilltop ramparts. Whilst the fence boundaries at Huntsman's Quarry could act as stock control measures much the same as at a hilltop site, there is an element of showmanship in the creation of ramparts that is missing in these lowland sites. The enclosure of hilltops, therefore, fulfils two imperatives for the communities creating them – functionality and monumentality, both could be as important as each other for those creating them.

Site	Dating evidence for other forms of enclosure	Description	Reference
Hilltop Sites			
South Cadbury, Somerset	C^{14} date for ditch 1260-920 *cal* BC	Substantial defensive ditch, and line of postholes on top of existing field boundary interpreted as a fence line	Barrett *at al.* 2000, 88
Berry Hill, Pembrokeshire	C^{14} date 860 ± 40 *cal* BC	Defensive ditch	Murphy and Mytum 2012, 294
Norton Fitzwarren, Somerset	LBA pottery found in fill	Defensive ditch	Ellis 1989, 5
Non-hilltop sites			
Brean Down, Somerset	Secure LBA context	Bank	Bell 2015, 121
Hog Cliff Hill, Dorset	Secure LBA context	Bank and ditch	Ellison and Rahtz 1987, 223
Huntsman's Quarry, Gloucestershire	Secure LBA context	Fence boundaries, possibly stock enclosure	Jackson 2015, 131
Stakepole Warren, Pembrokeshire	Secure LBA context	Bank enclosure topped with 1.6m thick wall	Benson *et al.* 1990, 202
Tremough, Cornwall	Secure LBA context	Enclosure 1 has a substantial ditch, possibly enclosing area 60-65m diameter.	Jones *et al*. 2015

Table 5.5 – Evidence for other types of enclosure.

The type of enclosure that was occurring on hilltop sites is much more homogenous – almost entirely palisades and ramparts. The ramparts were of the simplest design; the vast majority being univallate simple box ramparts and therefore lay at the start of hillfort rampart construction. Late Bronze Age enclosure has been found at roughly half of sites in both case study areas, but with the majority of sites having subsequent Iron Age hillforts built over them and little in the way of excavation, it is possible the percentage with LBA enclosure could be much higher. This type of enclosure went beyond that seen at the non-hilltop settlement sites – these structures were built in clearly visible locations and both forms would have taken considerable community effort, ramparts especially so. Enclosing the hilltop seems to have been particularly important in the Wales/Marches group, with both a higher percentage of enclosed sites and a proven development from palisade to rampart at some sites within the Late Bronze Age. Linked with the higher availability of water at these sites, this suggests they had a more significant role in the landscape especially as very few LBA settlement sites have been recorded in the low-lying valleys and floodplains of the central Welsh border region (Halstead 2011, 66), in contrast to the more heavily settled lowlands of SW England. The extended periods of construction, with preceding palisaded phases at a number of sites, hints at a complex narrative at play (James 2007, 164). This was never

simple defensive functionality; the investment in these sites, over generations, represent a community identity beyond mere defence. However, to gain a deeper understanding at what part these monuments played within Late Bronze Age society, it is necessary to investigate further the evidence for the function these hilltop sites may have served.

5.2.2 Structure

> 'All enclosures primarily define an area of land within which the presence or absence of structures and pits will inform the interpretation of its function.'
>
> (Rees 2008, 62)

The development and enclosure of hilltop sites in the Late Bronze Age of the Atlantic west of Britain is part of the changing and diversifying of settlement patterns seen during this period. The physical demarcation of space within the landscape in general had begun in the second millennium BC and became more widespread at the start of the first (Champion 1999; Cunliffe 2005). Changes in domestic architecture can be seen throughout the British Isles. Pope (2015) traces the decrease in house size in Scotland throughout the Late Bronze Age, with a decline in settlements in the west of the region from *c.* 850 BC onwards. She characterises the period by saying 'greatest episode of social change in the settlement record took place in the Late Bronze Age' (Pope 2015, 180). Cunliffe (2013) describes the period in southern Britain as a time where the homestead was becoming enclosed. The more diffuse Middle Bronze Age settlement patterns were being replaced with defined boundaries, believing it to be a 'visible statement about privacy and ownership' (Cunliffe 2013, 258). Brück (2007, 29) describes changes in longevity of sites; MBA settlements were 'relatively short-lived', and many sites, such as Lofts Farm, Essex, followed this pattern (Brown *et al.*1998, 258). However, many LBA sites saw an increase in their longevity. Reading Business Park, Berkshire has roundhouses repeatedly rebuilt on the same spot (Moore and Jennings 1992) (Fig. 5.8). Set within developing settlement patterns, the role of hilltop sites up to now has not been fully ascertained. By examining whether these impressive structures were occupied, their role within society should become somewhat clearer.

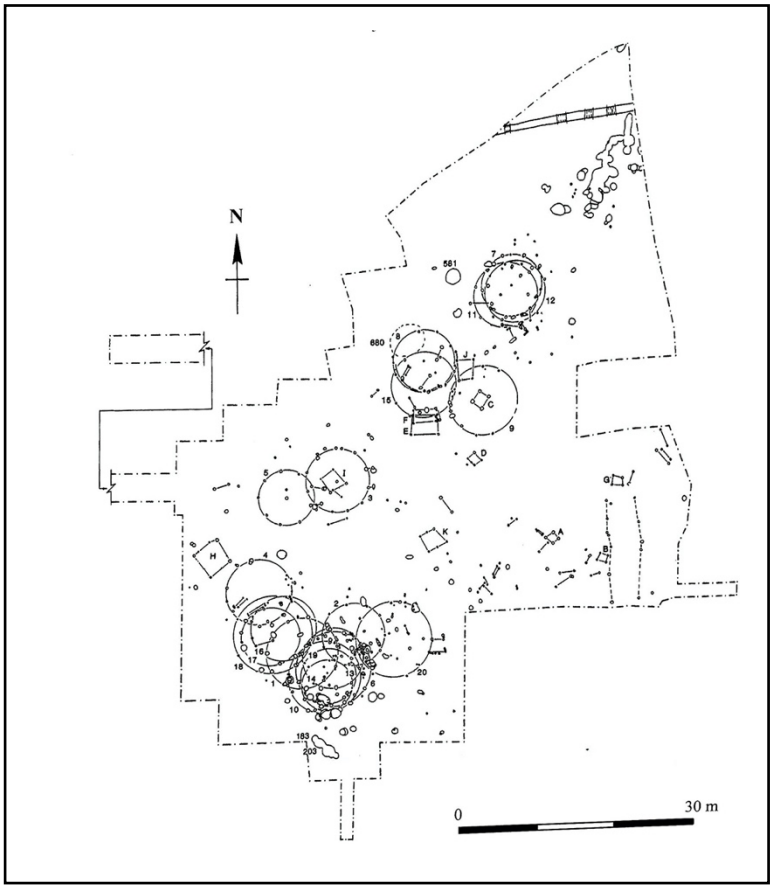


Figure 5.8 – Area 5, Reading Business Park, Berkshire with dates between 1000-800 *cal*. BC (Brück 2007, 28).

Structural evidence, whilst present at 70% of the non-hilltop settlements, is only present at 31% of hilltop sites in Wales/Marches, and 29% in SW England (Fig. 5.1). Many of the non-hilltop sites were developer-led excavations that yielded a great deal of information, whereas hilltop excavation has been more piecemeal, which will have had an effect on the amount and quality of data available (as detailed in Tables 4.1 – 4.7). Reid (1993, 54) describes how building evidence, especially stake-built structures, can easily be missed 'because of their ephemeral nature or assumed to be of natural origin'. Guilbert (1975a, 214) details how stake-built houses were more vulnerable to erosion, both human and natural, and were unlikely to survive subsequent prehistoric development of the site, whilst those built using postholes or trenches were more likely to leave archaeological traces. The possibility that stake-built structures were missed is more likely to have happened during early archaeological investigations, before the use of modern excavation techniques - which was exactly the time when many hilltop sites were excavated. However, the percentage differences are significant, which suggests that the building of structures did occur more often at the non-hilltop settlements rather than at hilltop sites. This lack of structural evidence at early hilltop enclosures has been documented for some time, with many authors commenting that they do not seem to have been densely populated (Brück 2007, 28; Cunliffe 1990; Hamilton and Manley 2001; Henderson 2007a, 308; 2007b; Jobey 1976; Ralston 2003). Writing about Traprain Law, East Lothian, Jobey (1976) observed that the 'restricted structural evidence' was disappointingly sparse especially when compared to the large amount of material culture recovered. This has led many to characterise early hilltop enclosures as functioning as stock corralling locations

rather than places people lived (Cunliffe 2003; Ellis and Rowling 2001) or as seasonal meeting places possibly related to the pastoral cycle (Brück 2007; Cunliffe 2005; Driver 2018; Henderson 2007a, 2007b; Hill 1995b; Tubb 2011). It is therefore important to examine what actual structural evidence exists at these LBA hilltop sites in the Atlantic west to see if any of these descriptions could apply to these case study areas.

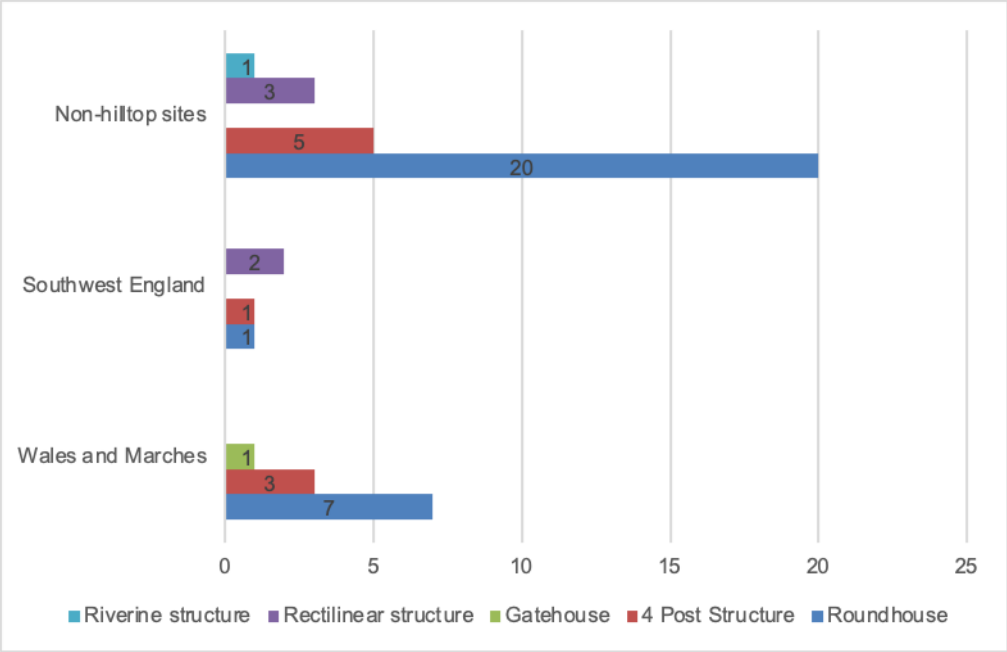


Figure 5.9 – Numbers of different structures occurring in each case study areas.

A number of different descriptions have been used in excavation reports for structural evidence including: house platforms, 4-post structures, post-built structures, gate-houses, hut-circles, gully structures, rectilinear structures and riverine structures. As many of these are different descriptions for structures that are basically roundhouses, in order to simplify analysis a number of these descriptions were combined, with house platforms, hut circles and gully structures described as roundhouses. The different structural types were then examined for the three different case study areas (Fig. 5.10). These five types represent differing classes of usage: whilst roundhouse evidence probably represent dwellings, in Iron Age contexts 4-post structures have been identified as ‘granaries’ - a 4-post square structure which has been raised above the ground in order to store grain with a free circulation of air whilst preventing rodents eating the stored supplies (Cunliffe 2003, 411; Jackson 2015, 120; van der Veen and Jones 2006, 223). Gateways serve as an access point into the hilltop enclosure. Jackson (2015, 108) postulated that rectilinear structures were probably associated with caring for stock – either as a shelter or byre, pens for animals, workshops or as storage. This is based on the location of the structures at Huntsman’s Quarry being away from the main settlement and close to waterholes. The riverine structure found only at Caldicote Castle Lake, Gwent, seems to have been a specialist structure associated with fishing activities (Parry 1990, 6). Details for rectilinear, riverine and gatehouse structures are in Table 5.6 below.

Site	Dating evidence for structure	Description	Reference
Rectilinear structures – hilltop enclosures			
Ham Hill, Somerset	Complete LBA vessel found inside structure	Rectilinear building of 6/7 postholes, enclosing area 6.7 x 2.4m sq. 25kg daub fragments found	Barrett *et al.* 2000
South Cadbury, Somerset	Secure LBA context	Two rectilinear structure F3 and F5. F3 has 6 posts and shows evidence of rebuilding, F5 probably 1.75m sq.	Brittain *et al.* 2013
Riverine structure			
Caldicote Castle Lake, Gwent	Secure LBA context	Specialist structure associated with fishing	Parry 1990, 6
Gatehouse			
Caer Cadwgan, Ceredigion	Secure LBA context	Access point into hilltop enclosure	Austin *et al.*1984

Table 5.6 – Evidence for rectilinear, riverine and gatehouse structures on hilltop sites

As already outlined, many academics believe that early hilltop enclosures were sparsely populated, and this has been borne out in the archaeological record, with Table 5.7 detailing evidence for 4-post structures and roundhouses found on these sites. It is worth mentioning that several excavators stated that on sites that have plentiful LBA evidence, structural evidence was particularly hard to find. Musson (1991) wrote that although general occupation debris was abundant at The Breiddin, surprisingly little evidence was found on this site for structures from this period with only one 4-post and a possible 6-post structure dated to the Late Bronze Age (see Fig. 5.15). The same can be said for Beeston Castle, which has only two post-built structures possibly Late Bronze Age in date due to an association with other Late Bronze Age material (Ellis 1993, 25). The structural evidence for the non-hilltop settlements by comparison is both extensive and diverse, with evidence within this group for 20 roundhouses and five 4-post structures. Structural evidence is found on 70% of non-hilltop settlements, and where found there is often a great deal. Fig. 5.11 shows some of the Late Bronze Age structures at the site of Tinney's Lane, Sherborne, and it is obvious that the levels of evidence here are on a very different scale to the hilltop enclosures.

Site	Dating evidence for structures	Description	Reference
Four post structures			
Beeston Castle, Cheshire	Secure LBA context	Two 4 post structures possibly LBA.	Ellis 1993, 25
Killibury, Cornwall	Late Bronze Age pottery	One 4 post structure excavated.	Miles *et al*. 1977, 112
The Breiddin, Powys	Secure LBA context	A four post and possible six post structure.	Musson 1991, 32
Roundhouses			
Castell Odo, Gwynedd	Secure LBA context	Timber building with diameter roughly 6m.	Alcock 1960, 84; Waddington 2013

Dinorben, Conwy	LBA metalwork found in each structure.	Roundhouses 1 and 16 assigned LBA date due to presence of LBA metalwork.	Savory 1971a, 24
St Michael's Mount, Cornwall	LBA pottery in situ.	House platform cut into slope with 1m wide granite wall built on eastern edge.	Herring *et al*. 2000
The Wrekin, Shropshire	Secure LBA context	Sequence of five roundhouses, last one with C^{14} date of 715-635 *cal* BC. Excavator believed the two earlier one's date to the LBA.	Standford 1984, 69

Table 5.7 – Evidence for 4-post structures and roundhouses on hilltop enclosures

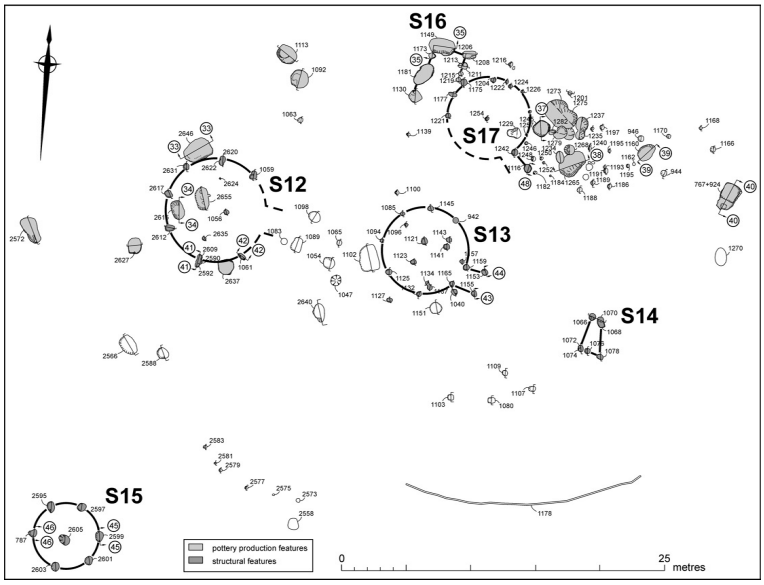


Figure 5.10 – Detailed plan of Late Bronze Age features, Area 3, Tinney's Lane, Sherborne. (Best and Woodward 2011, 218).

Therefore, it is becoming clear that the communities that built these hilltop enclosures had very different aims for these sites when compared to non-hilltop settlements. The difference between the insubstantial structures found on hilltop enclosures and the robust structures found in other settlement types is significant. When combined with the evidence for greater levels of enclosure on these hilltop sites, it appears that their role in society was different. However, it would be wrong to think that this means that people were not living on these hilltops. The evidence for the importance of water to these hilltop enclosures, especially in Wales/Marches, adds credence to the belief that these sites were periodically occupied by the community that built them, and it is by examining the evidence we have for these populations living and working on hilltops that the understanding of what they were being used for will increase.

5.3 LIVING AND WORKING ON HILLTOPS – OCCUPATION, CRAFTWORKING AND AGRICULTURE

5.3.1 Occupation

The evidence for structures is not the only indication of people occupying hilltop sites available. Being able to demonstrate whether people have lived on a site does not solely depend on evidence of houses being found – people living and working can leave a variety of different evidence. Occupation layers made up from the detritus of everyday living, rubbish heaps, hearths, pits and postholes all indicate human activity on a site in addition to structures. Table 5.8 shows the percentages of sites with these types of occupational evidence. In keeping with the structural evidence outlined above, the non-hilltop settlement sites group has the highest amount of general occupation evidence present at 85% of sites. However, unlike the structural evidence, the Wales/Marches group also has a substantial amount of occupational evidence with it found at 58% of sites, SW England is lower at 43%.

	Occupation debris layer	Midden	Hearth	Pits and / or postholes
Wales/Marches (n=16)	27%	8%	27%	38%
SW England (n=14)	14%	7%	7%	29%
Non-hilltop sites (n=20)	65%	10%	35%	55%

Table 5.8 – Number of sites with various occupation evidence present.

5.3.1.1 Occupation layers and Middens

General occupation debris layers are the most widespread type of evidence excavated (Table 5.8). This is the description given to layers that contain evidence of the detritus left over from general living such as charcoal, pottery sherds, bone pieces, metalwork and burnt stone, and can be useful as they often contain typological dating material such as pottery and metalwork, and bone and charcoal for radiocarbon analysis. This can range from a thin scattering, for example a layer 0.2m thick at Bryn Maen Caerau to a reasonably substantial layer 0.45m thick at The Breiddin. It can signify a short-lived episode of occupation, as Whitley (1943) believed was the case at Chalbury, to one that has built up over a reasonable amount of time, sometimes up against ramparts, as at The Breiddin. It can locate whereabouts on the site that the occupation has occurred - at Beeston Castle occupation layers indicated a major focus of activity taking place at what appears to be the Late Bronze Age entranceway into the site (Ellis 1993, 24).

However, there is considerable overlap between the description of an occupation layer on enclosed hilltop sites and that of a midden. The Breiddin, in addition to extensive occupation layers, also has an area up to 10 x 5.5 m in extent of a dark soil containing pottery, flecks of charcoal and burnt bone that

the excavator believed could be a domestic midden (Musson 1992, 61). South Cadbury has a much smaller dump of material similarly interpreted as a domestic midden (Barrett *et al*. 2000, 88). Whilst this description is broadly the same for the non-hilltop settlement site at Stackpole Warren (Benson *et al.* 1990, 204), the same cannot be said for the other midden in the non-hilltop settlement site group – Brean Down. This remarkable site belongs to a group of large midden complexes in southern Britain (Fig 0.2) and has dates ranging from 1310 – 780 *cal* BC (Bell 2015; Waddington 2008). Whilst the midden deposits at The Breiddin and South Cadbury are not in the same category at Brean Down, there is evidence for midden deposits occurring within hilltop enclosures elsewhere during Late Bronze Age in southern Britain. Both Balksbury Camp and Winklebury, Hampshire, have around 50cm deep midden deposits built up on the outer edges of the hilltop enclosure, dating to *c.* 900-700 *cal* BC (Waddington 2009, 137). It is therefore possible that similar activity that created the large midden sites were also occurring, to a lesser degree at these hilltop enclosures. This would support the argument that these hilltop enclosures were locations that could have hosted large-scale gatherings at certain times of the year.

5.3.1.2 Hearths and cut features

The final two types of occupation evidence present are hearths and cut features. Some of these sites have hearths directly associated with metalworking and these specific hearths are not included in this group and will be addressed separately in the craftworking section. The hearths, pits and postholes in this section have been found during excavations but cannot be directly associated with a structure. They are therefore evidence that human activity has been taking place on these sites during the Late Bronze Age without being too specific about that activity. It is, of course, easier to discern what is taking place with a hearth - they are used for cooking, heat and light. Hearths occur on a number of different sites as detailed in Table 5.9. It is therefore difficult to draw too many conclusions from these hearths, pits and postholes beyond the fact they signify human activity on these sites at some time during this period.

Site	Occupation dating evidence	Description	Reference
Wales and the Marches Group			
Beeston Castle, Cheshire	Secure LBA context	Reasonably substantial occupation layer containing charcoal and burnt bone	Ellis 1993, 24
Bryn Maen Caerau, Ceredigion	Secure LBA context	Occupation layer 0.2m thick	Williams 2001, 15
Coygan Camp, Carmarthenshire	Secure LBA context	0.30m thick occupation layer	Wainwright 1967, 26
Dale Fort, Pembrokeshire	Secure LBA context	Occupation layer sealed by later rampart	Benson and Williams 1987
Dinorben, Conwy	Found in secure LBA context	Occupation layer Isolated hearth in lower levels	Savory 1971b
Ffridd Faldwyn, Powys	Secure LBA context	Very thin occupation layer Remains of a hearth	O'Neil 1943
Pendinas Lochtyn, Ceredigion	C^{14} dated to 1210-810 *cal* BC	Isolated posthole containing charcoal	Scott and Murphy 1992, 9

The Breiddin, Powys	Secure LBA context	Reasonably substantial occupation layer 0.45m thick Domestic midden	Musson 1991,
The Wrekin, Shropshire	Located in layer dated to the LBA	Hearth excavated from under IA rampart	Standford 1984
Southwest England Group			
South Cadbury, Somerset	Secure LBA context	Domestic midden Isolated postholes	Barrett *et al.* 2000
Chalbury, Dorset	LBA pottery	Occupation layer under IA rampart	Whitley 1943
Ham Hill, Somerset	Secure LBA context	Isolated postholes	Brittain *et al*. 2012
Norton Fitzwarren, Somerset	Secure LBA context	Isolated postholes	Ellis 1989
Poundbury, Dorset	C^{14} date of 1080±90 *cal* BC	Occupation layer	Green 1987, 25
St Michael's Mount, Cornwall	Secure LBA context	Isolated postholes	Herring *et al.* 2000

Table 5.9 – Occupation evidence found in Wales/Marches and SW England areas.

5.3.2 Craftworking

> 'The Bronze Age witnessed an unprecedented flowering of craft activity'.
>
> (Sofaer *et al*. 2013, 469)

As we have already seen demonstrated in other settlement areas, the Late Bronze Age saw an upsurge in the amount and variety of craftworking industries. Sites show evidence of working in a range of materials such as metal, clay, bone, textiles, wood, bark, horn, antler, ivory, hide, amber, jet, stone and flint with these materials appearing alone or in combination (Sofaer *et al*. 2013, 469). Evidence for the extraction and production of raw materials, along with specialist tools and waste products has produced an increasing knowledge of the technologies being developed at this time (Champion 1999, 104). Whilst actual inorganic materials such as textiles, wood and leather survive only in rare instances such as waterlogged, anaerobic conditions (for example at Must Farm, Cambridgeshire (Knight 2016)), the tools needed for their production are more widely found and provide valuable insight into these critical industries (Brück 2007; Champion 1999; Sofaer *et al*. 2013). In this section, craftworking has been studied when it appears on a site – that is evidence of the actual industry, and not just the finished material. For example, as per Brück (2007), when the only evidence of metalworking appearing on a site are clay moulds, it is not included as freshly cast objects could have been transported in the moulds, and not necessarily produced on site. However, it is worth noting that freshly cast objects would still require finishing to remove flashes and transporting them in moulds precludes the re-use of the moulds at the production site. Table 5.10 details the sites within each of the case study areas where evidence of specific craftworking industries have been discovered.

Consistent with almost all the settlement evidence studied so far, the non-hilltop settlement sites have both the greatest percentages of sites showing evidence of craft working (60%), and the greatest

diversity of types found. Wales/Marches has 23% of sites with craft working evidence; SW England just 14%. They also have a marked reduction in the types of craft working found when compared to non-hilltop sites, with metalworking dominating. On individual sites in both Wales/Marches and SW England, the number of different craftworking types found on individual sites is much smaller. Even large, well excavated sites such as Beeston Castle and The Breiddin have only a couple of different types of craft working present (Table 5.10). What is becoming evident is that the number and type of craft industries taking place on hilltop sites in the Late Bronze Age is extremely restricted, both in number and type, compared to contemporary non-hilltop settlements. This suggests that it was the non-hilltop sites that were the main craftworking hubs, with hilltop sites having a different role to play within the community.

	Metalworking	Textile production	Bone/Antler	Leather	Ceramic	Jet/Shale	Flint
SW England (n=14)							
South Cadbury	✓						
Wales/Marches (n=26)							
Old Oswestry	✓						
Beeston Castle	✓	✓					
The Breiddin	✓	✓					
Porth y Rhaw	✓						
Dinorben		✓	✓				
Coygan Camp			✓	✓			✓
Non-hilltop Sites (n=20)							
Shorncote Quarry	✓						✓
Brean Down		✓	✓	✓		✓	
Caldicot Castle Lake		✓					
Combe Hey	✓	✓	✓		✓		✓
Eldon's Seat		✓				✓	✓
Tinney's Lane	✓	✓	✓		✓	✓	✓
Huntsman's Quarry	✓	✓	✓				
Gwithian	✓	✓	✓	✓			
Tremough	✓						
Trewey Down							✓
Dainton	✓						
Coburg Road							✓

Table 5.10 – Sites in the three study areas with craftworking evidence.

5.3.2.1 Metalworking

Metalworking is the main industry represented, with some of the sites like The Breiddin having evidence of substantial industrial activity (Table 5.11; Fig. 5.12). In addition to these hilltop sites, a Late Bronze

Age metalworking building 1.2 miles south east of South Cadbury was discovered during the South Cadbury Environs Project, dated to 1261-1047 *cal* BC, and therefore roughly contemporary to the hilltop enclosure. This shows that metalworking was also taking place in the extended area around the hillfort during the Late Bronze Age (Needham *et al.* 2012; Tabor 2008). Bronze-working can take place in almost any setting; the furnace that is needed to work bronze is not as large or as technologically sophisticated as that needed for smelting the raw materials (Harding 2000, 220). Much discussion has taken place in recent years about the place of the smith within Bronze Age societies. For many years Childe's view of the smith as an itinerant specialist having a distinct status in society was particularly influential (Childe 1930a, 44). However recent work has shown this model is rarely supported ethnographically, and that smiths, whist possibly peripatetic are normally under the control of the local hierarchy (Harding 2000, 236). At the non-hilltop site of Gwithian, Cornwall, the high level of metalworking activity over the course of the Bronze Age as a whole has been interpreted as multiple smiths working within a kinship-orientated activity where it is hard to imagine them as itinerant smiths travelling much beyond the immediate locality (Knight 2014; Megaw *et al*. 1961; Nowakowski *et al*. 2007).

Yates and Bradley (2010b) discuss the ethnographic evidence for the role of ritual within metalworking, and that the working of metal was not just a purely practical exercise, but one that involved specialist knowledge and ritual and that 'it can take place at special locations and is attended by arcane rules' (Yates and Bradley 2010b, 42). The social anthropologist Mary Helms said that prehistoric bronze working deposits should never be described as 'utilitarian" (Helms 2009, 155; Yates and Bradley 2010b, 42). Therefore, the fact that metalworking is the dominant industry being found on early hilltop sites is suggestive; it implies that these sites, built by the community and using significant resources to do so, are appropriate places for the working of metal, possibly by specialists living within the community, but certainly for the benefit of the community as a whole.

Site	Dating evidence for metalworking	Description of metalworking evidence	Reference
Wales and the Marches Group			
Beeston Castle, Cheshire	Found in securely dated LBA contexts.	Metalworking debris, scrap metal and high temperature hearths.	Ellis 1993, 24
Old Oswestry, Shropshire	Dated to LBA by similarities to those found at The Breiddin	One crucible found during Varley's 1939 excavation.	Hughes 1994, 79
Porth y Rhaw, Pembrokeshire	Dated to LBA-EIA transition.	One metalworking hearth with copper alloy debris.	Crane 1996, 1
The Breiddin, Powys	Found in securely dated LBA contexts.	Large areas of pits, furnaces, and working hollows with metalworking debris and refractory material present. (Fig. 5.17)	Musson 1991, 58
Southwest England Group			
South Cadbury, Somerset	Found in securely dated LBA contexts.	One possible kiln, scrap metal unlikely in a domestic setting and metalworking tools.	Barrett *et al*. 2000, 296

Ham Hill, Somerset	Dated to LBA / EIA transition	Two Llyn Fawr tradition stone axe moulds found.	Needham *et al*. 1998
Kendijack, Cornwall	Found in securely dated LBA contexts.	Tentative evidence of metalworking – copper ingots found in LBA contexts	Tylecote 1967
St Michael's Mount, Cornwall	Found in securely dated LBA contexts.	Tentative evidence of metalworking – copper ingots found in LBA contexts	Herring 2000

Table 5.11 – Metalworking evidence from Wales/Marches and SW England study groups.

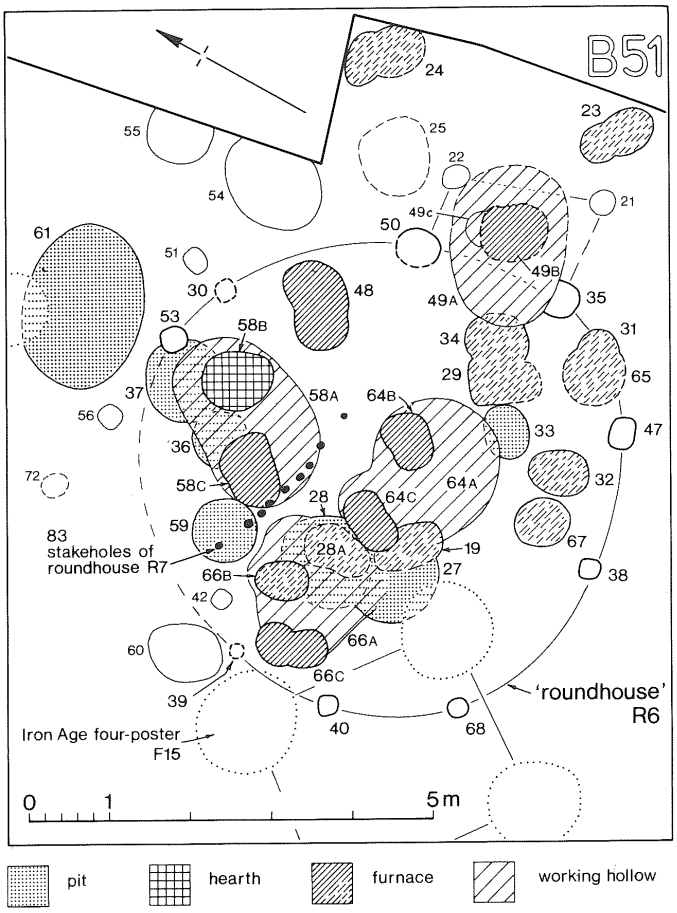


Figure 5.11 – The Breiddin: Late Bronze Age metalworking features (Musson 1991, 58).

5.3.2.2 Textiles

Textile production was an important part of Bronze Age life; indeed, it represents one of the oldest craft technologies pre-dating metallurgy by millennia (Andersson *et al.* 2010, 149). Textile production was a result of a complex system of interactions; agriculture, animal husbandry, environmental exploitation and the landscape all have a role to play in their creation (Andersson *et al.* 2010, 150). There are several stages in the manufacturing process: the production of the raw material, be it animal or plant based, its preparation by spinning using a spindle and distaff, and finally weaving into cloth (Sofaer *et al*. 2013, 477). It is a complicated process with a competent producer needing skills as well as access to the requisite raw materials and tools (Andersson *et al.* 2010, 165). The most common evidence for textiles

found on archaeological sites are loom weights and spindle whorls. Prehistoric weaving utilised an upright, 'warp-weighted' loom made from a rigid frame, with thread weighted down with loom weights (Fig. 5.13). Work by Mårtensson *et al.* (2009) has found that warp-weighted looms are more technologically complex than originally thought, with the weight and thickness of the loom weight having a direct influence on the type of fabric being produced. These looms would need yarn to be worked, with spindle whorls evidence of the preparation of fibres, whether from plants or animals, into yarn for weaving. Experimental archaeology in Denmark has demonstrated the amount of yarn from wool produced by various weights of Bronze Age spindle whorls per hour;

- 35m yarn hour with a 4g spindle whorl
- 40m yarn/hour with an 8g spindle whorl
- 50m yarn/hour with an 18g spindle whorl

The time for sorting and preparing the wool would also need to be included (Andersson *et al*. 2008).

Evidence for textile production has been found on only 12% of sites in Wales/Marches and no sites in SW England (Table 5.10). However, 35% of non-hilltop sites have textile manufacturing evidence present, which is a significant difference. Therefore, it would seem that it was these non-hilltop sites that were the main focus of textile manufacturing, with hilltop sites being utilised much less. This ties in with the evidence already discussed – hilltops were not the main focus for settlement, rather they were being used for something other than everyday living. The fact that textile production did occur on some sites would indicate that they were being sporadically settled; the result of transient occupation as spinning is an activity that could be easily packed up and moved. This strengthens the argument for hilltop enclosures being the sites for special, periodic community level events with non-hilltop sites being the main settlements.

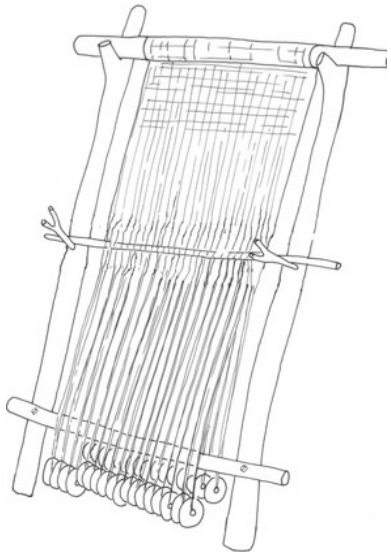


Figure 5.12 – Reconstruction of prehistoric warp weighted loom. (Mårtensson *et al.* 2009, 374)

Site	Dating evidence for craftworking	Description of craftworking evidence	Reference
Textiles			
Beeston Castle, Cheshire	Secure LBA contexts	Spindle whorls and loom weights	Ellis 1993, 78
Dinorben, Conwy	Secure LBA contexts	Spindle whorls	Savory 1976, 73
The Breiddin, Powys	Secure LBA contexts	Spindle whorls	Musson 1991, 156
Antler / bone			
Dinorben, Conwy	Secure LBA contexts	Finished and unfinished antler toggles, antler plaques, tools and a bead.	Savory 1976, 72-74
Coygan Camp, Carmarthenshire	Secure LBA contexts	Numerous finished and unfinished antler items, the most distinctive being a knife handle minus the blade.	Wainwright 1967, 26
Leather			
Coygan Camp, Carmarthenshire	Secure LBA contexts	Highly polished lengths of red deer antler tines used for leather working	Wainwright 1967, 26
Flint			
Coygan Camp, Carmarthenshire	Secure LBA contexts	Two thick pieces of antler, heavily marked and pitted from being used for flint knapping	Wainwright 1967, 26

Table 5.12 – Craftworking evidence from Wales/Marches group.

What has become apparent whilst looking at craftworking on hilltop enclosures is the paucity of evidence for such, especially when compared with the non-hilltop sites. Many more of the latter have evidence for multiple craftworking activities taking place, giving the impression of life being lived and worked at these sites. However, the hilltop sites have far less evidence, both in terms of the numbers of sites with craftworking present, and the nature of such evidence (Table 5.12; Table 5.13). The dominant craft process on hilltop sites, albeit in only a small number, is metalworking. As Keinlin (2013, 431) points out 'surprisingly little is known about the actual organisation of metalworking' within Bronze Age society. However, whilst many ethnographical examples exist that show metalworking has a 'special' place within society (e.g. Herbert 1984; Lahiri 1995; Reid and MacLean 1995), it seems likely that this was within a 'kin-based' model, with metal-workers firmly based within their communities (Harding 2000, Kienlin 2013, 432; Nowakowski *et al*. 2007). The fact that it is this industry that is the best represented in Late Bronze Age hilltop sites is significant, as this may well have had a special place within the community that constructed these sites. This could have been the placing of metalworking within a 'special' location, or the necessity to have metalworking available during 'special' occasions that took place on these sites. If, as has been suggested, these hilltop enclosures were created to host large-scale gatherings, possibly related to pastoralism, then the presence of a metal worker at this gathering may have been necessary for both trade and repair. This would also tie in well with the presence of metalworking within more mixed range of craftworking activities at non-hilltop sites, as their presence will have been necessary all year round. The same metal workers could have moved from the non-hilltop sites with the herds to the hilltops for these gatherings. Whatever role craftworking had at hilltop sites, it was different to that played at the main settlement sites in these communities.

	Metalworking	Textiles	Bone/Antler	Leather	Ceramic	Jet/Shale	Flint
Wales Marches (n=26)	15%	12%	8%	4%	-	-	4%
SW England (n=14)	7%	-	-	-	-	-	-
Non-hilltop (n=20)	35%	30%	25%	10%	10%	15%	30%

Table 5.13 – Percentages of sites with craftworking evidence.

5.3.3 Agriculture at hilltop sites

> 'A new managed and controlled landscape represents a momentous period of change in the lives of individuals and the priorities of communities. It is this lifestyle change and the intensification of agriculture that characterises the Later Bronze Age.'
>
> (Yates 2001, 65)

Field systems emerged in the Middle Bronze Age *c.* 1500 BC (Brück 2000, 273) often linked with an intensification of agricultural production (Bradley 1984, 94; Brück 2000, 275; Fowler 1981), but also representing a societal change in the way communities identified and controlled land (Brück 2000; Yates 2007a, 121). Coaxial field systems and Celtic fields, both field systems with linear boundaries, have been recognised in geographical areas as diverse as the chalk downlands of Marlborough Down and the upland areas of the Dartmoor reaves (Fleming 2007; Gingell 1980; 1992). These ordered landscapes with field boundaries forming rectilinear land plots and droveways to facilitate the movement of livestock marked a change in the mode and organization of agricultural production (Brück 2000, 277). However, as David Yates' quote shows, the Late Bronze Age saw a marked step change in the intensification of agricultural production and the enclosure and control of the landscape. At a number of sites, LBA settlement and field boundaries replaced the existing MBA ones, although as Cunliffe (2000, 157) says 'the dating of these long sequence of events ….is difficult to determine with any degree of precision'. At Reading Business Park, a system of rectilinear field boundaries appears to have pre-dated the Late Bronze Age settlement (Halstead 2011, 64; Moore and Jennings 1992, 30). Bestwall Quarry, Dorset (Ladle and Woodward 2009) has a similar MBA field system being replaced by LBA settlement and linear boundaries.

However, this farming intensification is not just seen within the existing Middle Bronze Age landscapes, but throughout lowland southern Britain. Over the last few decades, developer-funded excavation in lowland areas has established the existence of linear boundaries in previously unrecorded locations throughout southern England, for example along the Thames Valley (Fig. 5.14) (Yates 2007, 59). What this has shown is that in the Late Bronze Age stock rearing dominated within a mixed farming system, with a wide range of natural resources being utilised (Yates 2007a, 120). Agricultural intensification is evident in both arable and pastoral farming. Landscape alteration is seen in the Late Bronze Age - such

as terracing or lynchetting, irrigation and fertilising - which all increase the production of crops. Allotments create units where a greater range of crops can be grown (Pryor 1998, 79; Yates 2007a, 121), evident at Reading Business Park where small fields may have been utilised for growing flax and leguminous crops, both of which are demanding crops (Moore and Jennings 1992, 120; Yates 2007a, 121). The intensification within pastoral agriculture can be seen by the investment communities made to the physical systems need to control stock such as metalled trackways, watering holes and stockproof boundaries (Yates 2001, 66; Yates 2007a, 121). Between *c.* 1000 – 800 BC, communities invested massive amounts of effort into the building of linear ditches across the landscape, the function of which was probably associated with stock control (Cunliffe 1990, 333), but could also protect arable crops from livestock. They suggest a mixed farming system where livestock and arable needs to be kept separate (S. Stallibrass pers. com. 2021). These linear boundaries can be shown at a number of locations to lead up to locations that went on to develop into hillforts during the Early Iron Age – Fig. 5.15 shows the linear boundaries at Buzbury Rings, Dorset referencing the area that later became a hillfort (Cunliffe 1990, 332). Whilst often difficult to date precisely, Cunliffe suggests that there may have been an earlier phase of enclosure at these sites, possibly at the junctions of linear boundaries, evidence for which was destroyed by the development of the later hillforts. These may have served a communal function, probably associated with the control of herds.

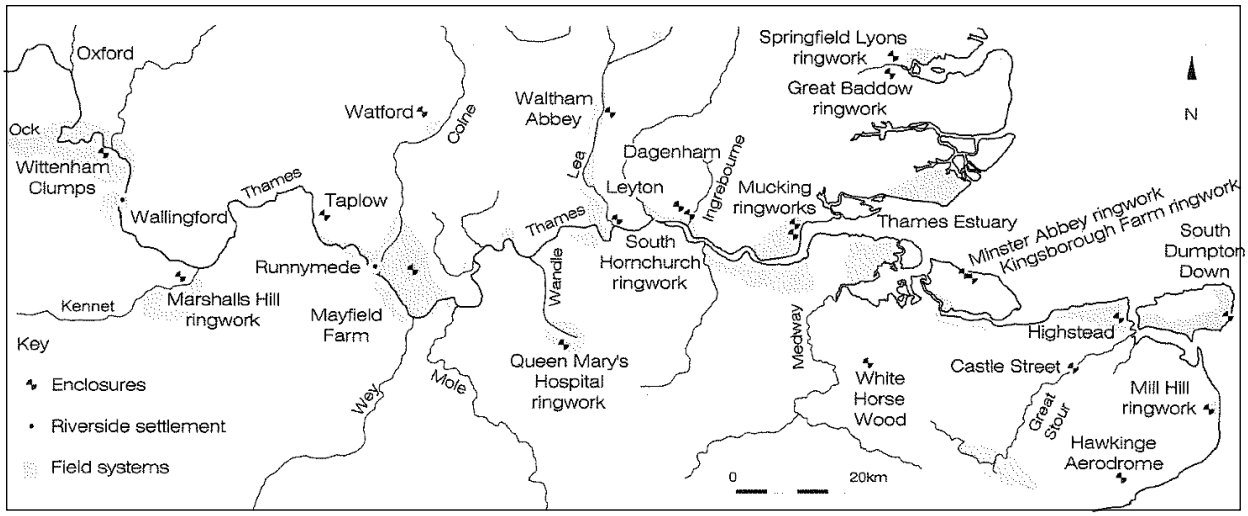


Figure 5.13 - Late Bronze Age fields and enclosures along the Thames Valley (Yates 2007, 61).

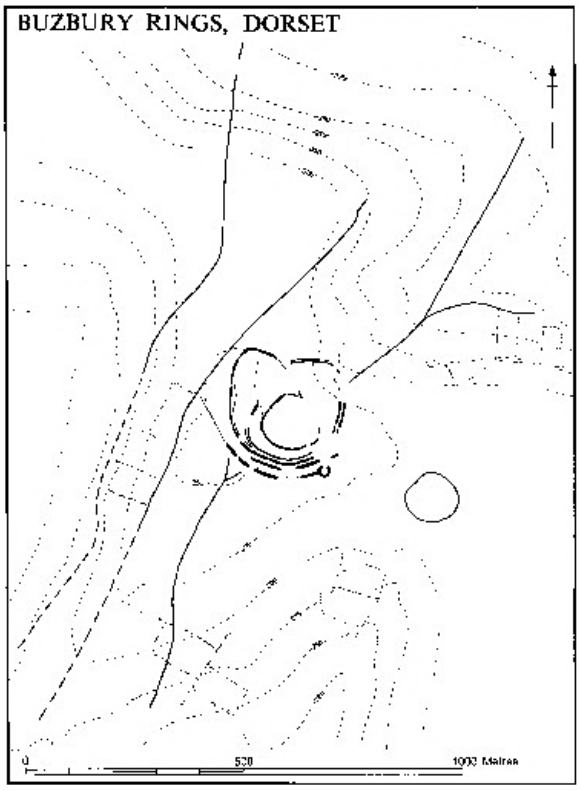


Figure 5.14 – Linear boundaries and enclosure at Buzbury Rings, Dorset (Cunliffe 1990, 332)

What place, therefore, did the hilltop sites have within the changing agricultural systems of the Late Bronze Age? In this study, evidence for arable agriculture includes the plant remains themselves, but also the presence of tools used for processing cereal crops such as querns, and four-post structures that are generally interpreted as raised granaries for the storage of grain (e.g. Brück 2001, 149; Cunliffe 2003, 411). Pastoral evidence can again be the physical remains of the animals themselves, as well as the tools utilised in the processing of secondary animal products such as spindle whorls and loom weights used to manufacture textiles out of wool. Evidence for agriculture has certainly been found on hilltop sites, albeit in much smaller numbers than found at other sites (Table 5.14). Out of all the different categories of settlement evidence, this is the biggest difference between hilltop sites and non-hilltop settlement sites. As already outlined, undoubtedly the differences in excavation levels play a part in these numbers. However, the difference in percentages is such that it suggests that these settlements were playing different roles within their communities, with the non-hilltop settlements – generally lowland open or enclosed settlements - being the primary agricultural hub rather than the hilltop enclosures.

	Overall % of sites with agricultural evidence	**% with just arable evidence**	**% with just pastoral evidence**	**% with both types of evidence**
Wales/Marches (n=26)	31%	8%	8%	15%
SW England (n=14)	29%	14%	7%	7%
Non-hilltop (n=20)	85%	10%	25%	45%

Table 5.14 – Percentages of all sites with agricultural evidence.

The agricultural evidence present at hilltop sites is detailed at Table 5.15. Overall, the available evidence is scarce, the only hilltop site that showed any large-scale agricultural activity was Beeston Castle. Here, charred spelt and emmer wheat spikelets were found dispersed over a wide area, interpreted by the excavator as either accidental burning during storage or food preparation, or a deliberate act using the crop processing by-products as a fuel source. However, the scale of the dispersal of the charred remains suggested either bulk parching or a large-scale storage complex (Ellis 1993, 82). The evidence for Late Bronze Age activity across all categories at Beeston Castle is one of the strongest out of all the hilltop sites examined. This site has clear evidence for enclosure, occupation, possible structures, metalworking and large-scale agricultural processing, which makes it one of the best candidates for the description of hillfort a traditional, densely occupied out of all the sites studied. However, the fact that this site stands out from the rest, from the sheer amount of Late Bronze Age evidence uncovered, shows just how unusual this site is.

What then does this tell us about the farming regimes at the hilltop sites in these two areas? The assemblages are very small, and with the exception of Beeston Castle, the 4-post structures at The Breiddin and Killibury and the lynchets at South Cadbury, none are permanent. The plant remains could easily be debris from more transient living arrangements, and do not necessarily signify arable agriculture was taking place on the sites. The querns certainly do signify grain processing, but again do not necessarily mean that the arable farming was taking place there. The same can be said for the pastoral evidence, assemblages of animal bones and textile tools can only be definite evidence of the consumption of animal products, rather than actual agriculture. Only the 4-post structures (if taken to be granaries), and lynchets prove that agriculture was taking place at the site, and these only occur in secure LBA contexts at four sites. Therefore, the lack of strong evidence for agriculture taking place at these sites may signify something different was happening here. This may well have been the location for large scale pasturing of flocks at certain times of the year, which would leave very little archaeological evidence. However, it is necessary to look at what was happening at the non-hilltop sites to get a fuller understanding of what agricultural practices may have been happening in the Late Bronze Age.

Site	Dating evidence for craftworking	Description of agricultural evidence	Reference
Arable evidence – Wales/Marches			
Beeston Castle, Cheshire	Secure LBA contexts	Charred spelt and emmer spikelet's found over wide area. Possible 4 post structures	Ellis 1993, 82
Berry Hill, Pembrokeshire	Secure LBA contexts	Small assemblage of plant remains, probably emmer or spelt.	Murphy and Mytum 2012, 297
Bryn Maen Caerau, Ceredigion	Secure LBA contexts	Small assemblage of plant remains, probably emmer or spelt.	Williams 2001, 19
Coygan Camp, Carmarthenshire	Secure LBA contexts	Quern	Wainwright 1967, 26
Dinorben, Conwy	Secure LBA contexts	Quern	Savory 1976, 74
The Breiddin, Powys	Secure LBA contexts	Quern and 4 post structure	Musson 1991, 151
Arable evidence – SW England			
South Cadbury, Somerset	Secure LBA contexts	Quern and lynchets	Britnell 2000, 210
Ham Hill, Somerset	Secure LBA contexts	Small assemblage of plant remains, probably emmer or spelt, one barley grain.	Stevens 2013, 93
Kilibury, Cornwall	Secure LBA context	4 post structure	Miles *et al.* 1977, 112
St Michael's Mount, Cornwall	Secure LBA contexts	Quern	Herring *et al.* 2000, 47)
Pastoral evidence – Wales/Marches			

Beeston Castle, Cheshire	Secure LBA contexts	Loom weight	Ellis 1993, 78
Castell Odo, Gwynedd	Secure LBA contexts	Bone fragments too small to identify	Alcock 1969, 86
Coygan Camp, Carmarthenshire	Secure LBA contexts	Bone fragments too small to identify	Wainwright 1967, 27
Dinorben, Conwy	Secure LBA contexts	Bone fragments too small to identify and spindle whorl	Savory 1971b, 10
Ffridd Faldwyn, Powys	Secure LBA contexts	Very small ox and sheep bones assemblage	O'Neil 1932, 25
The Breiddin, Powys	Secure LBA contexts	Spindle whorl	Musson 1991, 156
Pastoral evidence – SW England			
South Cadbury, Somerset	Secure LBA contexts	Very small sheep or goat bone assemblage, lynchets	Britnell 2000, 255
Norton Fitzwarren, Somerset	Secure LBA contexts	Bone fragments too small to identify	Levitan 1989, 62

Table 5.15 – Agricultural evidence from Wales/Marches and SW England groups.

5.3.5 Agriculture on non-hilltop sites

The paucity of agricultural evidence at hilltop sites stands in stark contrast to the plethora of evidence uncovered at non-hilltop settlements. Here, not only is there direct evidence for agriculture, but there is also evidence for the wider scale agricultural strategies being enacted by some of these communities. For example, in the area around the Avon Levels and Bristol Channel in Somerset and Gwent, such large amounts of agricultural evidence is present that it enabled Locock (2001) to construct a possible model for the usage of the various zones in the wider Levels landscape during the Late Bronze Age (Allen 1996; Hughes 1996; Locock *et al.* 1998; Parry 1990; Whittle *et al.* 1989). Other sites in this group with extensive agricultural assemblages also provide detailed information on the agricultural systems being enacted at this time. Huntsman's Quarry, Worcestershire, has yielded considerable information about Late Bronze Age activity on site between *c*. 1130–1010 cal. BC, with evidence of a sophisticated mixed farming system. Pastoral evidence includes the presence of waterholes, boundary features and droveways, rectilinear buildings interpreted as stables/byres and 3009 bone fragments in LBA contexts which included cattle, pig, sheep, deer and dog. Many of the cattle were killed past their prime beef ages, suggesting their value was for traction or dairy production. Loom weights and spindle whorls attest to the processing of secondary animal products. Arable remains included charred plants, with emmer and spelt wheat, barley, rye, oat and pea present, as well as flax pollen identified. Four-post structures have been found and interpreted as storehouses or granaries with querns demonstrating the processing of cereal crops on site (Jackson 2015).

This depth of evidence for agriculture on these non-hilltop settlement sites, whilst at least partly a result of the higher levels of archaeological excavation, does suggest that these sites were the primary agricultural focus for these communities. Whether that was for production, such as at Huntsman's Quarry, or for mass consumption, as at Brean Down, the sheer volume of evidence when compared to hilltop sites does seem to suggest that, whilst some agricultural activities, or the consumption of the resulting foodstuffs, was taking place at hilltop sites, they were not the primary locations for agricultural production. That is not to say that they did not play an important part in the farming cycle: it is very possible that hilltop sites played specific roles within the agricultural system, especially for the management of stock, probably as a large-scale summer sheiling for the herds. However, whilst there

is evidence for the consumption of both plant and animal food products, which in itself is evidence of people living and working on these sites for at least part of the year, the fact that this evidence is so sparse suggests that these hilltop sites were not acting as a central place for agricultural redistribution as per Cunliffe's interpretation of Iron Age hillforts (Cunliffe 2003, 167). Rather, they had a more nuanced place within the societies that created them. Increased archaeological excavation of the interiors of LBA hilltop sites would help clarify what place they had within the agricultural systems of the time. Confirmation of whether this lack of agricultural evidence does reflect the fact that there was less agricultural activity taking place on these sites would go a long way to helping understand what part these monumental sites were playing within Late Bronze Age societies.

5.4 DISCUSSION

The settlement evidence outlined in this chapter is building a picture of the possible place hilltop sites played within Late Bronze Age society of the Atlantic west of Britain. These upland sites have a markedly low level of evidence for human occupation when compared to the lowland, non-hilltop sites. There is some evidence for both arable and pastoral agriculture, however the majority have no evidence at all. Similarly, structural, occupational and craftworking evidence, whilst present on some sites, is sparse when looking at the whole group. Lowland, non-hilltop sites by comparison have much higher levels of settlement evidence and seem to be the primary agricultural production locations. Both pastoral and arable farming is present (Table 5.14), with a slight bias towards pastoral with 70% of lowland sites having this type of farming present, as opposed to 55% with arable. This emphasis on pastoral farming seen in the lowlands could help to explain the presence of these upland sites. Within a predominantly pastoral society, the use summer communal grazing grounds for the herds, perhaps coupled with community level gatherings, could be the motivation behind large scale human effort the construction of these monumental sites entailed. These sites were not there to be the main settlements, the evidence points to the lowland, non-hilltop sites fulfilling this role. However, their monumentality alone suggested that the role they played was significant.

The construction of large-scale linear boundaries during the Late Bronze Age shows that the necessity for the obvious delineation of land ownership was a deeply held one in these communities. The creation of enclosed hilltop sites, especially when the fact that there is very little evidence for permanent occupation is considered, could be part of this same impetus. These hilltop sites may well have played an important role in transhumance activities during the summer months – providing a base or corralling location for the herds during their summer grazing in the uplands – as well as being an obvious statement of control over these grazing grounds to all those around. If, as many believe, they also provided a location for seasonal, community level gatherings (e.g. Brück 2007; Cunliffe 2005; Driver 2018; Henderson 2007a; Hill 1995b; Tubb 2011) then their importance could be in terms of identity as much as practicality. The suggestion by Musson (1991,176) that gang-working could be responsible for the wandering line of the rampart at The Breiddin would support this – different groups coming together to construct the whole, with all invested in its creation. When considering the environmental deterioration being experienced during this time, identity and control of the land may well have been

one of the driving forces within society, of which linear boundaries and hilltop enclosures were the most obvious expression.

However, there is also regionality displayed between, and within, these two study areas. Wales/Marches show a higher level of settlement evidence than SW England almost completely across the board. This may be partly down to excavation bias – 43% of sites in SW England have poor or no excavation evidence when compared to 19% in Wales/Marches, however, they have similar amount of excellent or good evidence (31% in Wales/Marches to 28% in SW England) (Figure 5.6). However, as much of the settlement data examined in the chapter comes from these latter types of evidence, excavation bias might not be so pertinent. Therefore, it would seem that something different was happening in these two areas. Overall, Wales/Marches sites have more access to water, more settlement evidence, and a lower level of referencing older sites when choosing locations (with only 19% of sites built on hilltop containing a more ancient monument). SW England has less access to water, lower amount of settlement evidence but a higher level of sites built with pre-existing ancient monuments (50%). There seems to be different societal imperatives at work in these two areas. If identity was a driving factor, in SW England that identity could be coming from links to the ancestors, whilst in Wales/Marches, identity may be more linked to bringing new locations under that community's control.

Within the study groups, there are some differences between the areas. In SW England, the Cornwall clusters have had too little excavation to be able to conclude anything. However, Somerset and Dorset clusters have had a reasonable amount of excavation, enabling some deductions to be made. The Somerset sites have a reasonable amount of settlement evidence, however, the Dorset cluster, which is geographically closest, does not contain nearly as much occupation evidence, and unlike the Cornwall clusters, these sites have had some archaeological exploration. Therefore, it may be that the Somerset group did have an increased level of occupation during this period. It is possible that Somerset was more akin to sites further east such as Ram's Hill (Oxfordshire) at this time than the West. In Wales/Marches, enclosure seems to be the biggest driver within this study area as a whole – the Cheshire and Flintshire cluster has Late Bronze Age enclosure evidence in all of its sites. The closest cluster group geographically (Powys and Shropshire) is also the closest group in terms of levels of evidence. However, the two cluster groups that stood out as having the closest links in the previous chapter (Pembrokeshire and Carmarthenshire / North Cornwall), do not show as clear a link when looking at the settlement evidence. The Pembrokeshire and Carmarthenshire cluster does have significant settlement evidence, showing that during this period these sites were certainly occupied at least some of the time, with the North Cornwall group have almost no settlement evidence. However, again this lack of similar evidence could be purely down to reduced levels of excavation within the North Cornwall group.

What has become noticeable when looking at the settlement evidence for hilltop sites, is that there is a small group of sites that seem to have a much higher amount of evidence when compared to the others (Beeston Castle, Dinorben, The Breiddin and South Cadbury) (Fig. 5.16). These are the only sites that have all five types of settlement evidence – enclosure, structure, occupation, craftworking and

agriculture. They also have the most evidence within each group, for example the metalworking evidence at The Breiddin is the most comprehensive of any site, and the high levels of arable farming evidence at Beeston Castle has already been discussed. The reasonably close proximity of three out of the four sites is also interesting. If this higher level of evidence is replicated with material culture, then there is potential for a slightly different classification for these four sites.

Figure 5.15 – Sites containing all types of settlement evidence.
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5.5 CONCLUSION

This examination of the settlement evidence discovered on Late Bronze Age hilltop sites has shown that whilst these sites many contain indications that they were certainly occupied at times during this period, they do not seem to be the main settlement sites. The much higher levels of settlement evidence found on the non-hilltop settlement sites when compared to the hilltop sites, seems to show that the hilltop sites served a different purpose within society. These non-hilltop sites provided the agricultural basis for communities, with hilltops probably being used for pastoral activities such as summer grazing and community level gatherings. The next chapter will look at the material culture excavated from these sites, and whether these finds can support the evidence discussed so far.

CHAPTER SIX

INHABITING LATE BRONZE AGE HILLTOP SITES

> 'Bronze Age objects were not viewed solely as a source of economic and social capital. On the one hand, they embodied cultural values and moral imperatives. On the other, they too were conjured as active social agents. Bound into complex and often lengthy exchange histories, they formed inextricable components of the self.'
>
> (Brück 2019, 4)

This thesis so far has examined the landscape setting and settlement evidence of Late Bronze Age hilltop sites, comparing this with non-hilltop sites from the same region and time period. What has become apparent thus far is that the settlement patterns occurring on these hilltop sites are markedly different from those at the non-hilltop sites. This chapter will investigate whether these differing patterns are also present in the material culture, and what conclusions can be drawn about the social impetus for the creation of these sites during the Late Bronze Age from the items found there.

6.1 MATERIAL CULTURE IN THE LATE BRONZE AGE

6.1.1 Changing patterns of deposition

The middle-late second-millennium BC has been well documented as a time when the archaeological and depositional record across the British Isles moved from one of funerary and ritual monuments, towards one where a farming landscape with stable settlements took on a much higher profile (Pollard 2002, 29). The earlier Bronze Age saw individual burials in barrows, with most finds coming from mortuary contexts (Champion 1999, 95). The Middle and Late Bronze Age saw a change in funerary practices with fewer formal burial sites and from the mid second-millennium BC onwards, the adoption of cremation and internment in flat cemeteries, generally without markers or grave goods (Cunliffe 2013, 252; Roberts 2013, 540). In some areas the burial evidence is even sparser and by the early first-millennium BC evidence for the dead is limited to small quantities of cremated bones found in and around settlements (Brück 1995; Roberts 2013, 540). However, patterns can be distinguished within this sparse bone deposition; of the settlement sites with human bones, a significant proportion occur in boundaries and points of boundary transition, such as enclosure ditches (30%) and ramparts (14%) (Brück 1995, 257). This intentional deposition in boundary locations could signify the need to define identity or ownership of specific locations (Brück 1995, 257), as Parker-Pearson (1993, 203) said 'the roles which the living often attribute to the dead are active and powerful'. Therefore, whilst the lack of more formal burial locations may not necessarily mean there were no elaborate rituals taking place, whatever was happening is not as discernible archaeologically, and the funerary rites may have taken on a higher significance than the actual burial of the remains (Brück 1995; Champion 1999, 108; Cunliffe 2013, 252; Roberts 2013, 542).

Beginning *c*.1500 BC, burials were rarely accompanied with metalwork and pottery stopped being found predominantly in funerary contexts (as it had in the Neolithic and Early Bronze Age), instead becoming much more common in settlements (Pollard 2002, 29). At around the same time, the evidence for metal artefacts being deposited in watery contexts increased dramatically (Bradley et al 2016, 208). From *c*. 1300 BC onwards, this rate of deposition hugely accelerated. Fig. 6.1 shows the spike in bronze deposition that occurred during the Late Bronze Age roughly between *c*. 900–800 BC. Regional studies carried out in both the UK and northern Europe have revealed depositional practices following nuanced patterns of behaviour, with rivers, springs, fords, plus mountain and hill tops, and passes all playing an important role in deposition at this time (Bellmer 2012; Bradley 2000; Fontjin 2002; Fontjin 2019; Neuman 2015; Vachta 2016; Soroceanu 2012; Yates and Bradley 2010a; 2010b). These repeated depositions of particular types of metalwork at specific places in the landscape imply 'a widely-shared and long-lived desire to link particular valuables to particular kinds of places' (Fontijn 2019, 138). The assumption is that these objects assumed a cultural value that was then 'anchored' into the landscape by the act of deposition, creating a relational connection between the depositional landscape and the people within it (Ingold 2000, 297). Table 6.1 details very broad categories of metalwork types found in different locations in the British landscape, however, it is important to note that these are broad categories, and notable regional variations may occur. Whilst tools/ornaments are found in all categories, weapons are generally deposited in all areas with the exception of settlements. This suggests that the more notable or liminal places in the landscape were more fitting places for the deposition of weapons than the domestic settings of settlements. The traditional views of the accelerated rates of deposition occurring towards the end of the Late Bronze Age being the result of the conspicuous consumption of wealth through deposition (Champion 1999, 109) or the abandonment of a sort of bronze standard due to societal collapse (Needham 2007, 59) are being replaced by more nuanced ideas of 'economies of destruction'. Fontijn (2019) postulates that rather than destroying wealth, by depositing valuables within the landscape, other forms of value were being created – the act of deposition itself converted value from one kind to another. The giving up of costly items created an alternate value in terms of an abstract concept or socio-cultural quality (Fontjin 2019, 158). Considering the fact that these hilltop sites were a new phenomenon in the Late Bronze Age, it will be interesting to examine whether the depositional patterns of material culture found on these sites can add to this fascinating discussion.

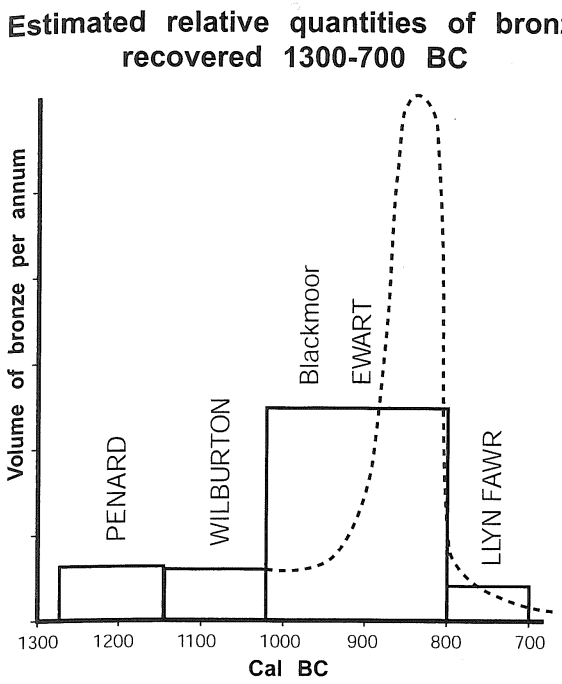


Figure 6.1 - Estimated relative quantities of bronze metalwork permanently deposited between *c*. 1300–700 BC. The relative proportions for the respective assemblages are represented by the areas under the blocks or curve; the volume deposited per annum therefore alters inversely with any change in time span. (Source: Needham 2007, 53)

Major rivers	Fords / causeways	Bogs / marsh	Notable places in the landscape	Settlements
Complete weapons, notably swords/rapiers Elaborate personal ornament	Weapons, notably swords Tools, notably axes Ornaments	Weapons notably spearheads Tools, notably axes Ornaments	Fragmentary weapons Tools, notably axes Ornaments	Tools Ornaments

Table 6.1 - Broad categories of types of metalwork deposited in various locations in the landscape. (after Fontjin 2002, 2019; Yates and Bradley 2010a, 2010b)

6.2 CREATING CHRONOLOGIES FROM MATERIAL CULTURE

6.2.1 Ceramics

The traditional ceramic sequence detailed in Table 6.2 developed through decades of study. In 1969, Burgess believed that 'over much of the British Isles there are no settlements, burials, defended sites, pottery or other non-metallic cultural material which can safely be assigned to the Middle or Late Bronze Age. There are a few localised exceptions such as the Deverel-Rimbury culture and Flat-Rim ware' (Burgess 1969, 29). This belief quickly became outdated, with Barrett (1980), drawing on sites that had radiocarbon dates such as Runnymede (Longley 1980), demonstrating a well-defined widening of vessel size at the start of the Middle Bronze Age and again in the Late Bronze Age. He established that during the Late Bronze Age there was an increasing emphasis on smaller vessels and a significant increase in pottery refuse found in settlement sites signifying an intensification in ceramic production

(Barrett 1980, 313). A number of studies in the 1980s examined assemblages in central-southern and eastern England (Langley 1980; Elsdon 1982; Adkins and Needham 1985) which helped extend the knowledge of manufacture and distribution of ceramics during the undecorated phase of the Late Bronze Age. However, it was still believed that these were largely localised systems, with only a very few examples of traded wares (Morris 2001, 42). It is during the last 20 years that studies of pottery from this period have refined both the chronologies and understanding of the social role that ceramics played during this period, and this will be examined later on in this chapter (Brudenell and Cooper 2008; Pope 2003; Waddington et al 2019: Woodward and Hill 2002).

Ceramic phase	Dates
Deverel-Rimbury	*c*. 1700/1500-1200/1000 BC
Post Deverel-Rimbury (PDR)	*c*. 1200/1000-850/750 BC
PDR decorated ware (akin to All Canning Cross ware)	*c*. 850/750 BC-600 BC

Table 6.2 – The traditional ceramic sequence from Middle Bronze Age to Late Bronze Age / Early Iron Age transition. (Lambrick 2014, 120)

Basing a chronological framework for the British Bronze Age upon ceramics does present a number of issues. Ceramic forms do not develop in clear, linear sequences, and in some areas of Britain pottery forms change very little over considerable time periods leading to extended dating brackets, sometimes hundreds of years. Sites can yield a great deal of pottery with few other cultural artefacts, such as metalwork, that could help with dating. The division between LBA-EIA pottery types is often very difficult to discern, and the radiocarbon calibration curve has an irregular plateau leading to broad calibrated dates between 800–400 *cal*. BC, making dating more difficult. (Willis 2002, 5-6; Lambrick 2014, 121). The classic ceramic sequence in Table 6.2 has largely remained unchallenged since Barrett (1980), however work by Morris (2013) proposes that a linear development from Deverel-Rimbury to Post Deverel-Rimbury (PDR) Decorated Ware (which includes a wider range of decorated vessel forms, examples of which can be seen in Fig. 6.2) looks dubious, with much more overlap and regional variation than originally suggested. Table 6.3 details the ceramic phasing within the Solent-Thames area, demonstrating significant variation even within this restricted region (Lambrick 2014, 120). Waddington *et al*. (2019), using Baysian analysis of radiocarbon dates associated with LBA midden sites in southern Britain (generally believed to date between *c.* 1000–600/550 *cal*. BC), created new chronologies for the Late Bronze Age-Early Iron Age transition. They were able to revise the conventional chronology of PDR Decorated Ware specifically for the midden sites in Wessex. For example, they pushed the occupation of East Chisenbury, with its accompanying PDR Decorated Ware to the later fifth century *cal.* BC, lengthening the chronology of the site (Waddington *et al*. 2019, 125).

Area	Deverel-Rimbury	Post Deverel-Rimbury (PDR)	PDR Decorated Ware
N Bucks	1500-1000 BC	1000-800 BC	800-300 BC
Oxon	1600 – 1100 BC	1100 – 800 BC	800 – 600 BC
S Bucks/Berks	1700 – 1200 BC	1200 – 850 BC	850 – 400 BC
Hants / IOW	1600 – 1100 BC	1100 – 800 BC	800 – 600 BC

Table 6.3 – Regional variations in dating of ceramic phases within the Solent-Thames area. (Lambrick 2014, 120)

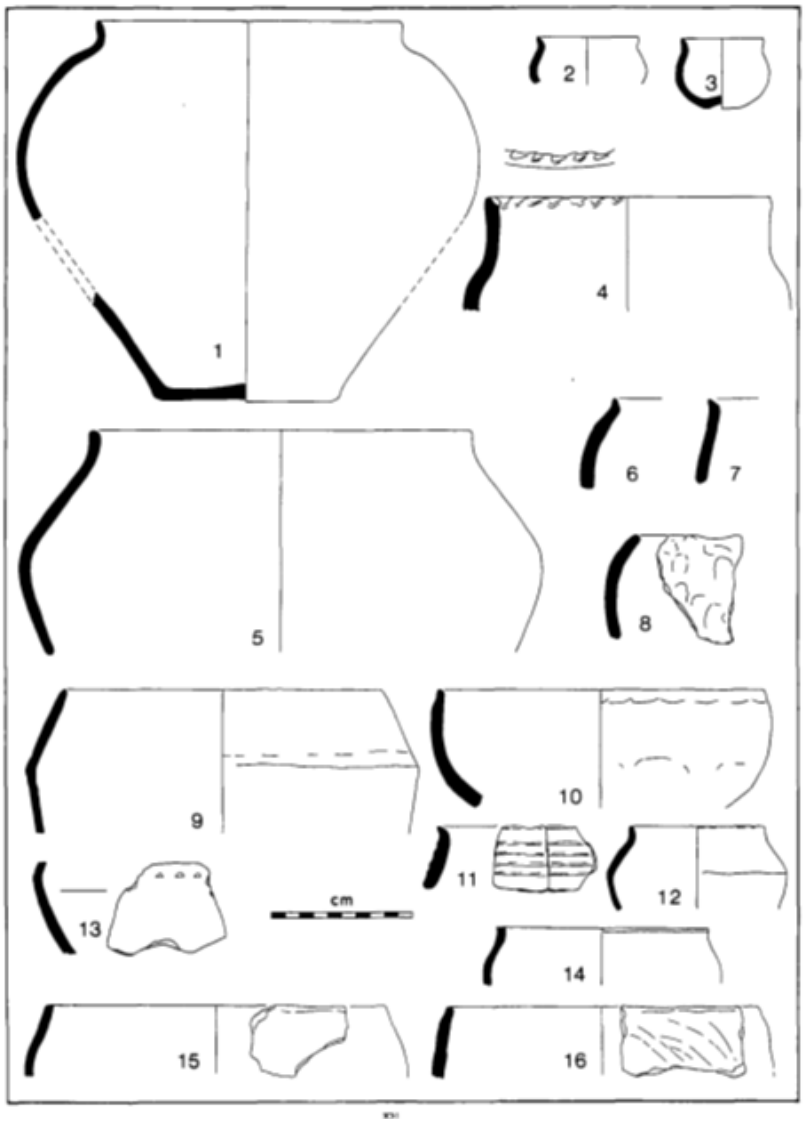


Figure 6.2a - Examples of Post Deverel-Rimbury Plainware taken from various sites in southern England. (Barrett 1980, 304-305)

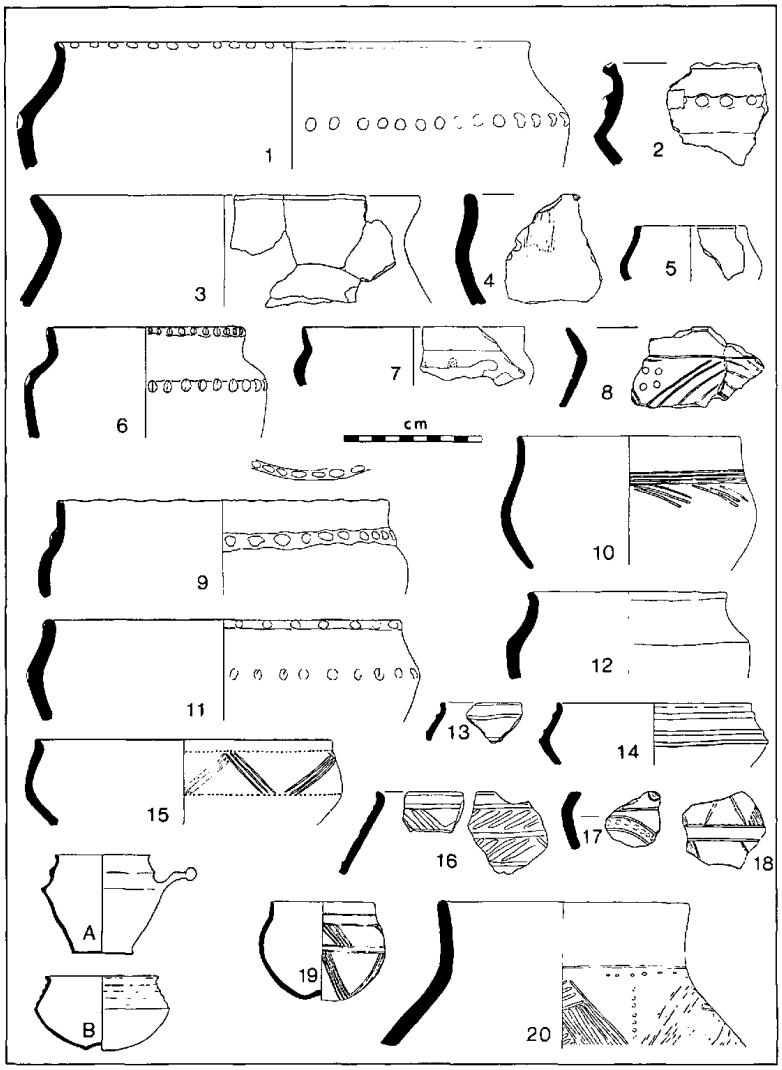


Figure 6.2b - Examples of Post Deverel-Rimbury Decorated Ware taken from various sites in southern England. (Barrett 1980, 304-305)

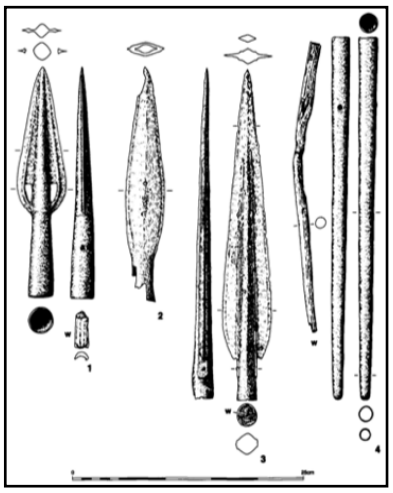
6.2.2 Metalwork

From the Chalcolithic / Early Bronze Age onwards, metalwork has provided much of the available chronological and cultural evidence (e.g.Needham 2000; O'Connor 2004; Sheridan 2008 for EBA goldworking). Unlike ceramics, metalworking assemblages tend to be discrete with easily discernable traditions, often with more than one metalworking assemblage spanning a single ceramic phase, as illustrated in Fig. 6.3 below. By the Late Bronze Age, the amount of bronze being deposited had vastly increased, enabling researchers to create detailed typological associations, and cross reference these with established continental sequences (Needham *et al*. 1997, 81). Three metalworking traditions spanned the Late Bronze Age (Fig. 6.3; illustrated at Fig. 6.4), with statistical analysis of radiocarbon dating evidence for the different traditions carried out by Needham *et al*. (1997) suggesting that overlap between these successive traditions was limited.

Date	Period	Pottery Assemblage	Metalworking Assemblage
1250	MBA ⇑	Deverel-Rimbury ⇑	Penard
1200			
1150			
1100	LBA	Plainware	Wilburton
1050			
1000			Ewart-Blackmoor
950			
900			mature Ewart
850			
800	Earliest Iron Age	Decorated	Llyn Fawr (bronze, plus iron)
750			
700			
650			
600	Early Iron Age ⇓		Hallstatt D ⇓

Figure 6.3 - Needham's chronology and terminology for pottery and metalwork during the Later Bronze Age and Earliest Iron Age (dates BC). (Needham 2007, 40)

A.



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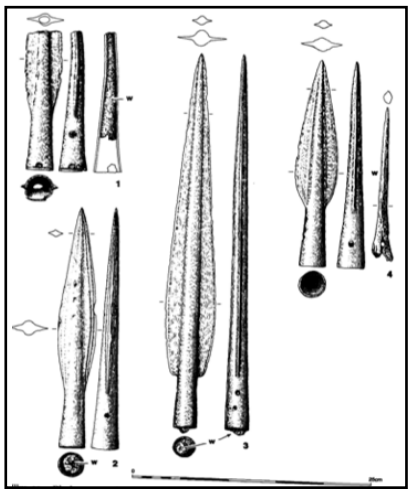
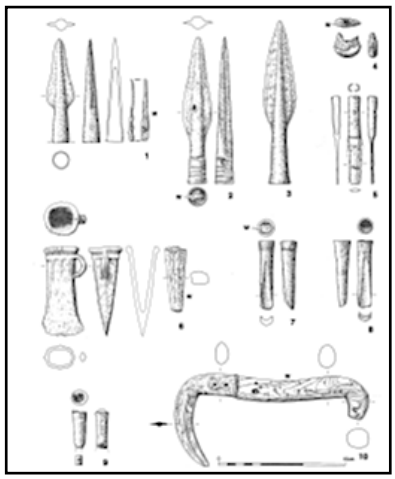


C.



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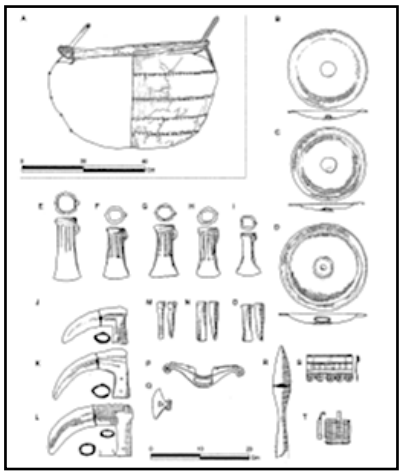


Figure 6.4 - Late Bronze Age Metalworking Traditions. **A.** Wilburton (Needham *et al*. 1997, 91). **B**. Blackmoor (Needham *et al*. 1997, 94). **C**. Ewart Park (Needham *et al*. 1997, 96). **D.** Llyn Fawr (Darvill 2010, 281).

6.2.2.1 Wilburton

The Wilburton assemblage succeeded the later MBA Taunton-Penard tradition *c*. 1140 BC and lasted until *c.* 1020 BC (Needham *et al*. 1997, 90: Needham 2007, 40; Burgess 2012, 13), and coincided with the PDR Plain Ware ceramic phase (Lambrick 2014, 120). It has traditionally been associated with the St Brieuc-des-Iffs material in north-western France, mainly due to supposed similarities between sword shapes (Needham *et al*. 1997, 90; Burgess 2012, 128). However, work done by Burgess pushed the French material back into the Late Penard II phase, making Wilburton successive, not contemporaneous to St Brieuc-des-Iffs (Burgess 2012, 141). Brandhem and Moskal-del Hoyo's (2014) investigation into the most emblematic of Late Bronze Age metalwork types, the carp's-tongue sword, looked at the three main European types: the Huelva, Nantes and Monte Sa Idda swords. They concluded that British Wilburton or very early Blackmoor assemblages had more in common with Iberian assemblages containing Huelva-type swords in terms of object category and fragmentation, despite only one Huelva-type hilt being found in the UK in the Llancarfen I Hoard in Glamorgan (Gwilt 2006). This British connection confirmed an earlier date for the Huelva-type swords when compared to the Nantes-type.

6.2.2.2 Ewart Park

Ewart Park is the most plentiful British Late Bronze Age metalworking assemblage. It is generally accepted that this abundance is not due to an increase in production during this phase, rather a massive increase in deposition - the deposition rate during the Ewart Park phase was roughly five times that of the previous 300 years of Penard and Wilburton phases (Needham 2007, 53). However, the bulk of this deposition of Ewart Park material came towards the end of the phase between 900-800 BC (Fig. 6.1). The early phase was under-represented, and Needham *et al*.'s (1997) examination of the chronology for British Bronze Age metalwork proposed a transitional phase between late Wilburton and full Ewart Park. This was based upon a Hampshire hoard named Blackmoor which comprised items with both types of features (Burgess 2012, 144). This group is not a separate phase but is accepted as an early phase of Ewart Park (Needham *et al.* 1997, 93). It is now seen to be broadly contemporaneous with the continental Huelva-type tradition with the transition from the Huelva to Nantes-type swords occurring towards the end of this period. Nantes-types only appear in the Ewart Park phase, with 70% of British metalwork assemblages containing Ewart Park-type swords also associated with Nantes-type weaponry (Brandhem and Moskel-del Hoya 2014, 23-26). Full Ewart Park metalwork peaked in circulation between *c*. 900- 800 BC declining sharply at the end of this period and had fallen out of use by around *c*. 800 BC (Needham 2007, 54). The deposition of other material types (including gold, amber, jet, shale and bone) also peaked during this phase. Brück and Davies (2018) set out to examine non-metal 'valuables' between 1150–600 BC, a period covering Wilburton, Ewart Park and Llyn Fawr assemblages; they found a peak in deposition of these types of items centring around the Ewart Park phase. Out of 102 Late Bronze Age amber beads, none came from the Wilburton phase, and only 8 from Llyn Fawr (Brück and Davies 2018, 668). Ewart Park metalwork occurred alongside the PDR Plain

Ware ceramic tradition, however, the very end of the phase coincided with the transition to PDR Decorated Ware (Lambrick 2014, 120).

6.2.2.3 Llyn Fawr

The last phase of Bronze Age metalworking, coming after Ewart Park and spanning the transition between the LBA-EIA is the Llyn Fawr assemblage; the final stage in a British bronzeworking tradition that had lasted 1,500 years (O'Connor 2007, 74). This change in metalworking phase is also reflected in ceramics, with PDR Decorated Ware replacing Plain Ware *c*. 850-750 BC and lasting until *c*. 600 BC (Lambrick 2014, 120). The Llyn Fawr phase is controversial insofar as many academics have placed it solely in the Iron Age (Cunliffe 2005; Needham 2007; Gerloff 2010), others at the very end of the Late Bronze Age (Brück 2007; O'Connor 2007). Pope (2015; 2021) whilst acknowledging that the settlement evidence demonstrates a definite shift around 800 BC, the traditional end date for the Bronze Age, also shows that socially accepted traditions such as bronze deposition carry on past this date, demonstrating a social conservatism and retention of social norms. Waddington *et al*.'s (2019) investigation of midden sites demonstrated that these phenomena are not purely restricted to the transition, that they occurred in both the Late Bronze Age and Early Iron Age. Milcent (2012) constructing a three-part chronology for the Early Iron Age of north-west France and southern Britain (1er Fer 1,2 and 3), had the earliest British EIA stage characterised by the Llyn Fawr assemblage (Milcent 2012, 142-143). There is certainly evidence that early ironworking was taking place by this time – the Llyn Fawr hoard itself contained iron axes and sickles (Fig 6.5) (Boughton 2015, 22; Needham *et al.* 1997, 99; Savory 1980). Excavations at Hartshill, Berkshire have uncovered ironworking on the site as early as *c*. 1000 BC, the earliest securely dated ironworking in Britain (Brett *et al.* 2003; Collard *et al.* 2006) and probably contemporaneous with the earliest iron working in mainland Europe (Gomoz de Soto *et al.* 2006; Rovira 2001). The Nantes-type sword, characteristic of the Ewart Park phase, was replaced by Gűndlingen-type swords *c*. 800-750 BC (Boughton 2015, 35; O'Connor 2007, 73). However, this was a short-lived phase, being replaced by Mindelheim-type swords by *c.* 700 BC (Cunliffe 2013, 294-299). Therefore, it is possible that the LBA-EIA transitional phase of Llyn Fawr constitutes a separate phase in itself, and whilst the mechanics of this is out of the scope of this thesis, it is important to understand that the approximately 250 years that constituted the Llyn Fawr phase was one of upheaval and change.

Figure 6.5: The iron sickle from the Llyn Fawr hoard. (Boughton 2015, 21)

Date BC	Period	Pottery Assemblage	Metalworking Assemblage	Continental Connections
1250	MBA	Deverel-Rimbury	Taunton-Penard	
1200				St Brieuc-des-Iffs type swords
1150				
1100	LBA		Wilburton	Huelva-type swords
1050		D-R to PDR Plain Ware transition		
1000				
950		PDR Plain Ware	Ewart Park Blackmoor phase	Huelva-Nantes transition
900				
850			Ewart Park	Nantes-type swords
800		PDR Plain to Decorate Ware		
750				
700	LBA/EIA	PDR Decorated Ware	Llyn Fawr	Gűndlingen-type swords
650	EIA			
600				Mindelheim-type swords

Table 6.4: Summary of all recent chronological research detailed above, with transitional periods between phases marked in grey.

6.3 THE MATERIAL CULTURE OF LATE BRONZE AGE HILLTOP SITES

In order to understand the role material culture played at Late Bronze Age hilltop sites, consideration will be given here to function rather than specific type or material. The goal of this thesis is to gain a greater understanding of the social role of these hilltop sites and therefore the function of the artefacts found is more important than their material. The three usage categories are personal items, weaponry and tools, with pottery examined separately. The same material can therefore appear in different categories (i.e. bronze in all three as pins, swords and axes; antler in personal items and tools as pendants and picks). The control group of non-hilltop sites is again examined to establish similarities or differences in material culture usage. When the percentage of sites within each study area with these artefacts present was calculated, the results were interesting. The differences are stark – in both personal items and tools categories, the non-hilltop groups have significantly more sites represented with hilltop sites having slightly more weapons present (Fig. 6.6). Even with the fact that the mainly developer-led excavations of non-hilltop sites could potentially have recovered more from these sites as opposed to hilltop site excavations, these results seem to support the findings of the settlement chapter in that these two different site types were playing different roles within the societies that created

them. Tools were found at 85% of the non-hilltop sites, as opposed to at 27% and 29% at hilltop sites, suggesting that non-hilltop sites played a greater role in agriculture and manufacturing processes within society.

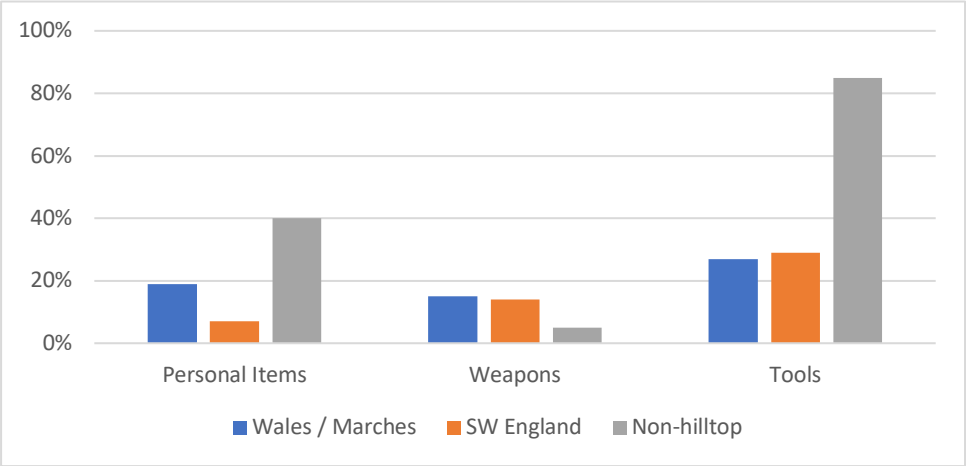


Figure 6.6 - Percentages of sites within the study areas with material culture categories present.

6.3.1 Personal items

The term 'personal item' is used here to denote an artefact that cannot reasonably be described as either a tool or a weapon, even if they do serve a purpose such as a toggle or razor. These are items that would most likely have belonged to an individual or family, and were not used in craftworking (although they could have been the product of craftworking at that site). Their use could be purely ornamental, such as bracelets and rings (Roberts 2007, 139), utilitarian or ornamental such as pins and toggles (Sørensen 2013, 229) or for personal hygiene such as razors and tweezers (Piggott 1946, 121; Roberts 2007, 149) - as broken down below (Table 6.5). This does not mean that artefacts in other categories were not personally owned (for example axes or swords), but rather these are items intended for use on or around a person's body, potentially showing evidence of people actually living their lives and not just working at a particular site.

Site	Evidence	Reference
Wales and Marches Group		
The Breiddin	4 complete bronze pins 5 fragmentary bronze pins shanks Dome headed bronze stud Plain bronze ring Bronze tweezers Fragmentary bronze penannular bracelet Piece of amber, possibly a bead Amber bead One 6-pointed star faience bead Possible Kimmeridge shale pendant Ironstone pendant	Musson 1991
Castell Odo	Decorated stone – probably a bead	Alcock 1969
Dinorben	2 iron razors 1 spiral bronze ring Small square bronze plaque Fragmentary head of shepherd's crook type bronze pin 4 antler toggles Perforated antler plaque and pegs from wrest board of lyre Antler bead	Savory 1971
Ffridd Faldwyn	Bronze penannular bracelet	O'Neil 1943
Helsby	1 bronze pin found inside socketed axe	Garner 2016

Moel y Gaer, Rosesmor	Small stud, similar to continental type	Guilbert 1975
Southwest England Group		
South Cadbury	2 bronze tweezers 2 single edged copper alloy tweezers Two bronze razors 5 straight shafted bronze pins Fragmentary gold bracelet Gilded ring	Barrett *et al.* 2000
Non-hilltop sites		
Brean Down	1 copper bracelet 2 gold bracelets 3 shale armlets 1 bronze sheet 1 antler toggle 1 bone pin	Bell 2015
Caldicot Castle Lake	1 copper bracelet 2 perforated tusk/tooth pendants	Parry 1990
Combe Hay	1 fired clay bead	Price and Watts 1980
Eldon's Seat	1 bronze sheet 3 shale armlets	Cunliffe and Phillipson 1968
Gwithian	3 bronze pins 5 shale armlets 1 bone bead 1 bronze pin	Nowakowski *et al.* 2007
Huntsman's Quarry	2 shale armlets 3 bone pins	Jackson 2015
Shorncote Quarry	1 bronze sheet	Brossler *et al.* 1997
Stackpole Warren	1 bronze ring	Benson *et al.* 1990
Tinney's Lane	2 bronze rings 1 bronze pin 6 shale armlets 2 bone/antler pendants 2 fired clay beads	Best and Woodward 2011

Table 6.5 Personal items from hilltop and non-hilltop groups.

	Bead N=9	**Bracelet Armlet N=26**	**Pendant N=6**	**Ring N=5**	**Pin N=25**	**Stud N=2**	**Toggle N=5**	**Razor N=4**	**Tweezer N=5**	**Musical Instrument N=1**	**Bronze Sheet Plaque N=4**	**Total number**
Wales / Marches N=26	56%	8%	33%	33%	44%	100 %	80%	50%	20%	100%	25%	33
SW England N=14	-	4%	-	17%	20%	-	-	50%	80%	-	-	13
Non-hilltop N=20	44%	88%	67%	50%	36%	-	20%	-	-	-	75%	47

Table 6.6 – Percentages of total numbers of personal items found in each case study area.

	Stone N=22	Amber N=2	Antler Bone N=16	Faiance N=1	Bronze N=39	Iron N=2	Gold N=4	Copper N=4	Clay N=3	Total number
Wales / Marches N=26	14%	100%	37.5%	100%	49%	100%	-	-	-	33
SW England N=14	-	-	-	-	23%	-	50%	50%	-	13
Non-hilltop N=20	86%	-	62.5%	-	28%	-	50%	50%	100%	47

Table 6.7 - Percentages of items made from specific materials found in each case study area.

	Ornaments N=74	Toilet Articles N=9	Clothing fasteners N=5	Musical instruments N=1	Decoration N=4
Wales / Marches N=26	32%	33%	80%	100%	25%
SW England N=14	9%	67%	-	-	-
Non-hilltop N=20	58%	-	20%	-	75%

Table 6.8 - Percentages of personal items in each usage category found in each case study area.

The three tables above explore the percentages of excavated personal items found in each study area, illustrating some interesting findings. Table 6.6 deals with the percentage of total numbers of personal items, and shows definite bias towards either hilltop or non-hilltop locations for some items. Bracelets and armlets are overwhelmingly found in non-hilltop settlement locations whereas rings, pins, studs, tweezers and razors are all found in much greater numbers on hilltops. Similarly, there are greater percentages of items made from naturally occurring materials (stone, antler/bone, clay and wood) in non-hilltop settlement, whereas metallic materials (bronze, iron, and copper) occur with much greater frequency on hilltops, the exception being gold (Table 6.7). It is certainly true that upland areas tend to have very poor preservation conditions for organic materials, with thin, acidic soils and high rainfall compared to lowland sites that tend to have deeper, more benign soil conditions and lower levels of leaching. This could lead to the different levels of preservation seen for organic and none organic materials seen here. Whilst it is true some of the natural materials would have to be imported from distant sources, for example amber and Kimmeridge shale, they did not require the transformative and intensive industrial processes that metalworking did. The metal items were not all necessarily made on hilltops (although some may have been), however, the fact that it was hilltop sites and not lowland settlements where they were found is significant. Table 6.8 categorises, as far as it is possible to do, the uses that these items would have been used for, again showing certain preferences. Whilst ornaments are more spread between all three areas, toilet articles and clothing fasteners have a definite bias towards hilltops.

What conclusions can therefore be drawn from this data? From previous chapters, the non-hilltop sites seem to be the centre for settlement, craft and agricultural production, and it is therefore logical that those sites would contain more items personal to the people living there. However, considering the ephemeral nature of evidence for people living on hilltop sites already outlined, there is a higher number of personal items present than may have been expected and made from high-status materials such as bronze. Both hilltop site study areas have produced evidence for toilet articles, with none found on non-hilltop sites. These are items that go beyond meeting the body's immediate needs, specifically designed for bodily grooming (Traherne 1995; Frieman *et al.* 2017). Items that are made to adorn the person, irrespective of whether they have a practical purpose, can have a much deeper meaning. Sørensen (2013, 224) discusses the relationship between identity and dress, and how the 'cultural appearance of a person is a complex signifier.' Late Bronze Age hilltop sites were a new phenomenon, suggested by many to have acted as seasonal meeting places, possibly related to the pastoral calendar (Brück 2007; Cunliffe 2005; Henderson 2007a, 2007b; Hill 1995; Driver 2018; Tubb 2011). If these were places where communities came together in large numbers for socially-significant activities, it is perhaps unsurprising that attention was paid to physical grooming and appearance (Brück 2019, 153).

If these hilltop sites were special places for the people that built and used them, there could also be the possibility that at least some of the personal items found on these sites were not the product of unintentional loss, but of deliberate deposition. Although personal items such as pins, bracelets and tweezers are rare in hoards of this time (Musson 1991,133), settlement deposition is known to occur from the MBA onwards (Brück 1995; Pope 2015). Only one was found in an atypical location – the bronze pin found deliberately placed inside the socket of a 3-ribbed socketed and looped axe at Helsby (Cheshire). This axe was found in 1935, so the exact find position is unknown, but the presence of the pin makes it more likely that this was a deliberate deposition (Garner 2012, 40). At The Breiddin, four out of five LBA pins were in occupation deposits behind the rampart, however one was in a suspected collapsed rampart core deposit, and the bracelet fragment with expanded terminal was found at the hillfort entrance; more significant locations (Musson 1991, 137). At South Cadbury, the pins and gold/gilded items came from general deposits on the eastern plateau. The two razors, however, had more unusual contexts. One was found in a pit in the interior and the other from the centre of the rampart (Barrett *et al*. 2000, 179). It is therefore conceivable that at least some of these very personal items, which represented the individual is a very intimate manner, could have been deposited as appropriate tokens at significant locations on these sites. Fontijn (2019, 122) concludes that the deposition of items relating to the body is related to 'anthropogenesis', that the human identities connected to these personal objects are ultimately transitory and it is appropriate to return them to the landscape in these meaningful places.

It is important to acknowledge, however, that the hilltop sites that have produced the bulk of the personal items are the same ones that have produced the most settlement evidence, namely The Breiddin, Dinorben and South Cadbury. Interestingly, the fourth significant hilltop site, Beeston Castle, whilst having a rich assemblage of tools does not have any definite Late Bronze Age personal items. One undecorated D-shaped shale ring fragment was discovered in the Early Iron Age rampart material and

may be Late Bronze Age, however the excavator could not be certain (Ellis 1993, 62). This examination of the evidence for personal items on hilltop and non-hilltop sites has revealed that whilst more of these items were excavated in lowland settlements, where the bulk of the population probably lived, the number, and more importantly the types of personal items found on hilltops is significant. A greater range of ornaments, as well as a bias towards metallic objects shows that whilst habitation of hilltop sites may have been more ephemeral, the importance of appearance whilst there was taken seriously.

6.3.2 Weapons

The items detailed in this section are all artefacts that can reasonably be described as weapons. Certain artefact types such as knives and axes could be included in both the weaponry and tools category, however, whilst rib knives are more likely to be tools, bronze knives/daggers were judged to be weapons. It is also probable that these were personally owned items, however, their raison d'être is very different from those of the personal items already investigated and are therefore a separate category. The percentages of sites within each study group with weapons were broadly similar (10-14% of sites; Fig. 6.6), however the amounts of weapons or weapon fragments excavated at these sites tell a somewhat different story (Table 6.9; Fig. 6.7). It is immediately obvious that the Wales /Marches area has a greater number of artefacts with more than the other two groups combined. Whilst two of the Wales/Marches sites have been extensively excavated and have large LBA assemblages (Beeston Castle and The Breiddin), the same is true of the two southwest England sites that have weapons present (South Cadbury and Ham Hill). Indeed, the non-hillfort sites are the most extensively excavated of all, and have produced the least amounts of weapons, therefore it is important to examine the possible reasons for this preference for weapons in Wales/Marches.

Site	Evidence	Reference
Wales and Marches Group		
Coygan Camp	47 stone slingshot	Wainwright 1967, Driver 2013
Crowther Camp (Guilsford Hoard)	6 bronze spearheads 1 bronze sword hilt and 2 blade fragments	Davies 1967
Beeston Castle Metalworking	1 bronze spearhead 1 socketed bronze knife 1 bronze sword blade fragment	Ellis 1993
The Breiddin Metalworking	Tip and hilt of a bronze sword Fragmentary bronze sword hilt 1 socketed bronze knife 1 small looped bronze spearhead	Musson 1991
Southwest England Group		
South Cadbury Metalworking	2 bronze spearheads 2 socketed knives / daggers	Barrett *et al*. 2000
Ham Hill	1 two-edged bronze dagger	Slater *et al*. 2011
Non-hillfort Group		
Gwithian Metalworking?	1 sword blade fragment	Nowakowski *et al.* 2007
Rumney Great Wharf	1 slingshot	Allen 1996

Table 6.9 – Weapons found in all three study areas; metalworking sites marked in blue.

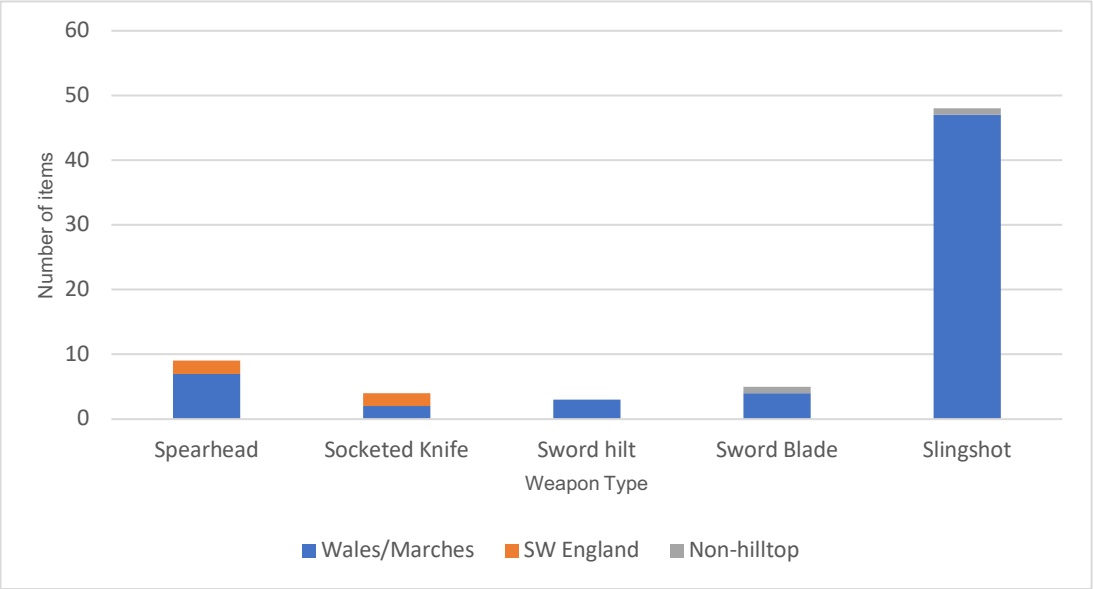


Figure 6.7 – Frequency of weapon types in all three study areas.

	Socketed knife	Sword Blade	Sword hilt	Spearhead
Fragmented	-	3	2	1
Complete	5	-	-	3

Table 6.10 – Fragmentation of non-hoard weapons found in all case study areas.

Many of the excavated weapons within this database were found in a fragmentary condition (Table 6.10). Traditionally known as scrap or trade hoards, partly fragmented bronze weapons are known to be in circulation as scrap metal from the cargoes in the LBA shipwrecks at Salcombe and Langdon Bay (Needham *et al*. 2013). The Guilsford Hoard, found at Crowther's Camp, contained 120 fragmentary bronze weapons and tools and was described as a 'scrap hoard' awaiting recasting by its excavator (Davies 1967). However, no metalworking evidence has been found at Crowther's Camp, and the increasing number of LBA hoards containing fragmented metalwork, for example Langton Matravers, Dorset (Roberts *et al*. 2015) and Bloody Pool Hoard, Devon (Knight 2018) has led to the development of more sophisticated interpretations. Fontjin (2019, 119) theorized that the process of breaking these bronze objects was in itself important. If one fragment was deposited in a significant location, the other parts could be distributed by the participants thus creating a relationship between them and the landscape. Knight (2019) using experimental archaeology to replicate the fragmentation seen in LBA swords and spearheads from hoards in SW England, showed that in many cases this fragmentation occurred only when a heating and striking event took place; a noteworthy occasion. This interpretation fits well with the non-hoard fragmentary weapons found within these case study areas. As Table 6.10 illustrates, it is swords that are the most common fragmented weapon, and whilst the sites at which they were found also had evidence of metalworking, (Table 6.9), the contexts in which these items were found are ambiguous. For example, at The Breiddin, the sword fragments were found unstratified in the hilltop interior, away from the metalworking area (Musson 1991). At Beeston Castle and South Cadbury, the sword fragments were found near to metalworking areas, but not definitely associated with them (Ellis 1993; Barrett *et al*. 2000). The site at Gwithian has the possibility that metalworking was taking

place on site, with several LBA moulds recovered. However, this is not definitive as no other metalworking evidence has been located, and therefore it is not known whether the rapier blade fragment found in this layer is associated with metalworking or not (Nowakowski *et al.* 2007). It is therefore no longer appropriate to view fragmentary bronze objects merely as scrap awaiting recycling. That scrap metal was in circulation is beyond doubt, however, the fact that both fragmentary and complete weapons were almost entirely deposited on hilltop sites seems to show that it was the location that was significant to these acts of deposition.

One significant item, found just outside of a hilltop enclosure, is the shield found close to South Cadbury (Fig. 6.8). The shield which was of the Late Bronze Age Yetholm type, was found in a silt-filled ditch, dated to the Bronze Age on a spur just outside of the main South Cadbury site (Coles *et al.* 1999). The ditch-fill included both Early and Late Bronze Age ceramic sherds, with the LBA sherds making up the majority. What makes this shield even more significant is that it appears to have been deliberately damaged prior to deposition. A hole, probably made by the thrust of a wooden stake, had pierced the shield and the rim (the strongest part of a shield) had been battered in one location creating significant damage. The shield had been deposited face down, close to a layer of burnt stones, thought to be contemporary, with the gnawed pelvic bone of cattle or red deer laid to the south-west of the rim (*ibid*. 37). The site itself was formed from the junctions of two ditches, the creation of which disturbed an Early Bronze Age Beaker burial (Knight 2016a). What makes this find truly fascinating is that whilst the Yetholm-style of shield dated to the Penard Period (1300-1125 BC), the bone found with the shield was radiocarbon dated to 1056-843 *cal* BC (*ibid.*). This suggests that the shield had been kept for over a century before its deposition, making an extremely noteworthy occasion, as Fontjin (2019) theorized. The deposition of this beautiful item, at a location close to the large and well-developed Late Bronze Age hilltop enclosure of South Cadbury strengthens the argument that these sites were deemed important significant enough to be the location where such deposition took place.

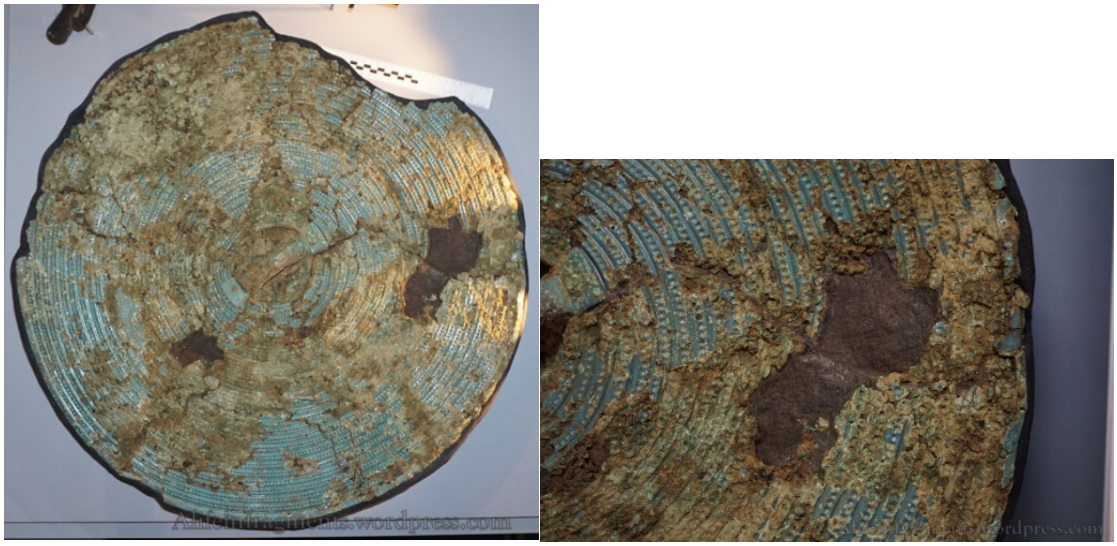


Figure 6.8 – The South Cadbury Shield, with the detail of one of the deliberately made holes. (Knight 2016a)

What could be the connection between hilltop sites and weapons? O'Brien (2018) links the beginning of hillfort building in Ireland to the Middle–Late Bronze Age transition (1400-1100 BC), when there is a fundamental shift in weaponry. Before this, the emphasis was on archery and tool-weapons such as axes and daggers, however during this period specialised bronze weapons became the norm including rapiers, spears and swords. He notes that in Ireland the emphasis is on close quarter combat, with no apparent use of long-distance weaponry such as the bow or slingshot (O'Brien 2018, 14). Similarly, Vandkilde (2011) hypothesises that in Central Europe, this same period of social transition and upheaval between Middle-Late Bronze Age (*c* 1300-1200 BC) led to the construction of defensive sites. Whilst enclosed hilltop sites clearly 'reference forms of architecture which appear defensive to modern concepts of warfare' (Anderson 2012, 247), these sites probably had different functions dependent on their cultural context (Vandkilde 2011, 374). The interpretation of them cannot now be seen solely in terms of oppositional binary approaches; *either* defensive or symbolic; social inclusion or exclusion (Anderson 2012, 245), but rather a more nuanced approach is needed, acknowledging the role that multifaceted, local circumstances played. The term *warfare* itself is problematic, as it is an ambiguous word loaded with meaning (Anderson 2011, 611), and suggests enough military strength being used to overcome a large-scale opposition, which Armit (1997, 48) deems to be a trait of states not tribal societies and therefore not appropriate for the Late Bronze Age. That *conflict* was happening within society at this time is incontrovertible (Uckelmann and Mödlinger 2011); experimental archaeology has shown wear patterns of LBA weapons are consistent with use, for example Anderson's (2011) examination of the slashing and thrusting of spears and the high level of skill required to use it in battle. Late Bronze Age skeletons found in Tormarton, Gloucestershire illustrate the traumatic results of this use; dating to 1315 – 1045 BC, two male skeletons suffered several spear wounds, brutal enough to break the spearhead off inside the body (Osgood 2008, 340). Thorpe and Parker-Pearson (2005, 5) assert that economic benefit underpins all conflict, therefore it is probable that the conflict during the Late Bronze Age was the result of communities vying for resources during a time of environmental and societal upheaval. The fact that weapons occur on hilltop sites rather than lowland settlements is significant, but it does not necessarily follow that the enclosure of these hilltops was solely a result of defensive intent during a period of conflict; they could also be a statement of strength or community cohesion that played differing roles depending on the circumstances of the day.

What can the weapons found on the case study hilltop sites tell us? They are the same general types of weapons as those found in Ireland at the same time, with swords, daggers and spears all being part of the weapons panoply of the time (Anderson 2011, 611). As Vandkilde (2011, 365) says 'weapons make warfare and warriors', so the fact that in this study they are almost exclusively found on hilltop sites could link these sites directly with local conflict. However, it is probably more nuanced than this. Whilst these items all serve a warlike purpose, they can also be symbols of status - both in terms of martial power but also wealth. In the case of swords, this could be prestige handed down through the generations. It is ultimately possible that the higher numbers of weapons found on hilltop sites could be linked to the wide range of personal items found there. If, as Sørensen (2013, 224) believes, that the cultural appearance of individuals was of great importance, then it is just as likely that the higher number of weapons found on hilltops was as a result of Late Bronze Age individuals wanting to display their wealth and importance at community events through the weaponry they carried.

There is one type of weapon found at one site that does not fit into the normal range of Late Bronze Age weaponry. At Coygan Camp (Carmarthenshire) 47 stone slingshots were found, the date of which was initially given between the eighth-second century BC date by Wainwright (1967), but later assigned to the Late Bronze Age due to the pottery evidence by Driver (2013). These slingshots were recorded as being located in the pre-rampart phase of occupation, along with Late Bronze Age pottery, two saddle-querns, animal bones and an extensive leather-working assemblage of antler tools. Whilst well-reported for the later Middle Iron Age (Cunliffe 2005; R. Pope pers. comm 2021.), they are almost absent from LBA hillfort literature. It is virtually impossible to be certain that they were truly Late Bronze Age in context and not intrusions from later periods at the site. Wainwright excavated around 1,850 pebble slingshots between 1963 to 1965, recording 47 as Late Bronze Age, 100 as Iron Age and the rest as Romano-British (Wainwright 1967,161). If we do accept their context, what possible role could they have played at the site? As well as having an offensive role, they are equally used as both a hunting tool and a protection aid for shepherds (Skov 2013, 3). Indeed, if we are to believe that these LBA hilltop sites played an important role in pastoral activities, these slingshots could equally have been used for keeping wolves away from the herds to keeping aggressors away from the site.

6.3.3 Tools

The greatest range in the amounts of sites having a material culture type was for tools (Fig. 6.6). Tools were present at 28% of Wales/Marches sites and 31% of SW England hilltop sites, compared to non-hilltop sites at 95%. This is a very significant difference, suggesting non-hilltop sites as the location of the bulk of craftworking and agricultural activities within society. This would seem to support the conclusions of the previous chapter, which determined that the lowland sites had much higher levels of settlement evidence and were the primary agricultural and craftworking productions locations. Is it therefore necessary to investigate whether the nature of the tools found in these different sites corroborates this supposition, or whether different patterns are emerging? Whilst it is true that tools occur on the majority of the non-hilltop sites (Figs. 6.9- 6.10: Table 6.11), the preference for bronze on hilltops that was seen with personal items is again found with tools. Table 6.12 shows that 88% of bronze tools were found on hilltop sites, with lowland settlements having much higher percentages of all other material types, with the exception of antler/bone which was relatively evenly distributed (54%-46%). Non-hilltop sites have much higher percentages of tools involved in domestic craftworking, such as textile production, with hilltop sites only having a higher number of tools involved in metal and antler working. Querns are more evenly distributed, but it must be noted that there are more than double the amount of hilltop sites, therefore querns are twice as often found on non-hilltop sites than hilltop ones. One artefact that has been excluded from the analysis are potboilers; heated stones that traditionally have been seen as used in cooking. Thomas (2010) has shown that whilst they can heat water, they could not have been used in cooking as they make the resulting liquid undrinkable and could just as easily have been votive offerings.

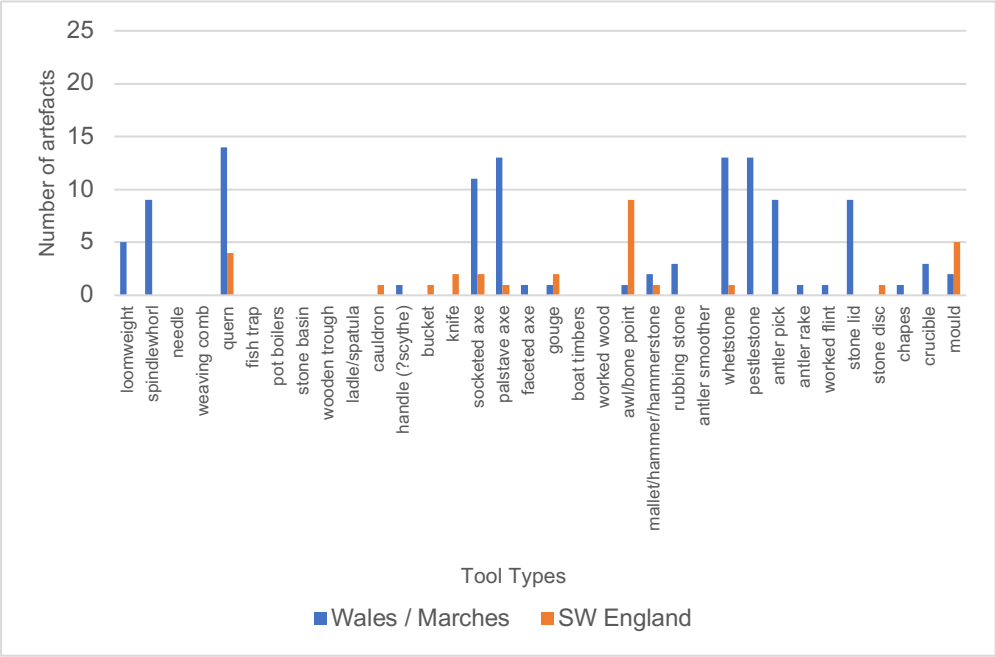


Figure 6.9 – Individual tool types in hilltop study groups.

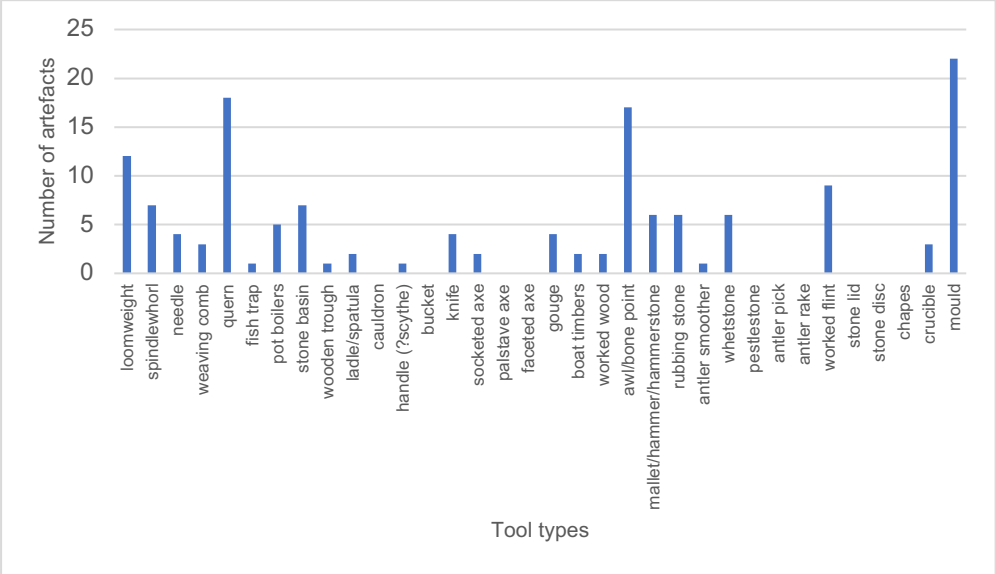


Figure 6.10 – Individual tool types in non-hilltop study group.

	Loom weight N=56	Spindle whorl N=16	Needle N=3	Weaving Comb N=3	Quern N=33	Fish trap N=1	Basin N=7	Trough N=1	Ladle / spatula N=2	Awl / Point N=27
Wales / Marches N=26	11%	50%	-	-	42%	-	-	-	-	4%
SW England N=14	-	-	-	-	12%	-	-	-	-	39%
Non-hilltop N=20	89%	50%	100%	100%	45%	100%	100%	100%	100%	57%

	Cauldron N=1	Handle N=2	Bucket N=1	Knife N=7	Socketed Axe N=13	Palstave Axe N=8	Faceted Axe N=1	Gouge N=8	Worked Flint N=14	Stone Lid N=9
Wales / Marches N=26	-	50%	-	-	73%	93%	100%	11%	7%	100%
SW England N=14	100%	-	100%	-	18%	7%	-	22%	-	-
Non- hilltop N=20	-	50%	-	100%	9%	-	-	67%	93%	-

	Hammer mallet N=8	Rubbing Stone N=9	Whetstone N=12	Pestle stone N=14	Antler smoother N=3	Antler pick N=2	Antler rake N=8	Crucible N=6	Mould N=18	Chape N=23
Wales / Marches N=26	25%	33%	36%	80%	89%	100%	100%	50%	12%	100%
SW England N=14	12.5%	-	18%	-	-	-	-	-	31%	-
Non- hilltop N=20	62.5%	67%	45%	20%	11%	-	-	50%	76%	-

Table 6.11 – Percentages of total numbers of each find's assemblage found in case study areas.

	Bronze N=51	Stone N=132	Clay N=25	Wood N=15	Antler/Bone N=31
Wales / Marches N=26	53%	52%	13%	-	52%
SW England N=14	35%	5%	2%	-	1%
Non-hilltop N=20	9%	44%	84%	100%	47%

Table 6.12 – Percentages of material types found in all case study areas.

6.3.3.1 Axes

As already noted, 88% of bronze tools were found on hilltop sites, and the majority of these are axes. Wales/Marches group stands out as the area where the majority of the axes are found (Table 6.13). The three LBA axes found in SW England all come from a hoard which also contained of 30 pieces of tin and copper, some of which showed evidence of smelting, found at Kendijack Castle (Cornwall) in the late nineteenth-century (Tylecote 1967; Todd 2014, 153). This hoard shares similar traits with that of the Guilsford Hoard from Crowther's Camp (Powys), insofar as the latter, which contained 120

separate metal items, showed degrees of fragmentation. Whilst traditionally seen as scrap metal awaiting recasting, as already discussed, it is just as possible that these were ritually deposited. Of the 24 axes from Wales/ Marches, 16 of them came from this hoard (Davies 1967). However, this leaves eight non-hoard axes found on hilltop sites in this study area, and one from a non-hilltop site: the find locations of these axes shed light on activities taking place at these places. There is, however, one other axe found on a hilltop site not included in this analysis. At Porth y Rhaw, Pembrokeshire, a degraded LBA socketed axe was found in a much later context – with a Romano-British pottery sherd in the fill of a gully below the footing of a roundhouse; deposits that gave a radiocarbon date of 2179 ± 79 *cal*. BC. (Crane 1998, 48). Whilst this was an LBA-type axe, the fact it was found in a much later context, whether as a genuine LBA residual loss or a curated item handed down through the generations, places it outside the scope of this analysis.

	Socketed axe	**Palstave axe**	**Faceted axe**
Wales/Marches (n=26)	10	13	1
SW England (n=14)	2	1	0
Non-hilltop (n=20)	1	0	0

Table 6.13 – Details of axes found in all three study areas.

The single socketed axe found in a non-hilltop location came from the site at Tinney's Lane, Sherborne, Dorset. This fascinating site, dated to the 12th-11th centuries *cal*. BC, has extensive evidence for Late Bronze Age pottery production. Despite a large finds assemblage, only seven metal objects were found, mainly consisting of awls and pins. However, one object was 'a socketed axe or some other object with a convex edge' (O'Connor 2011, 234), found in an area with metalworking evidence, with the excavator believing it to be accidental loss rather than a deliberate deposit (*ibid*.). Fontijn (2019) has shown that this may be an outdated view; this axe could just as easily have been a deliberate deposition. On hilltop sites, leaving aside the hoards at Crowther's Camp and Kendijack, axes were also found at Beeston Castle and Helsby, Cheshire and The Breiddin, Powys. Whilst little can be said about where the Helsby axe was found, as the find location in 1935 is unknown, it had a pin inserted inside the socket suggesting deliberate deposition (Garner 2012, 40). The socketed axe found at The Breiddin was found 'standing upright 4 cm below the modern turf-line in the interior, but not in a detectable feature. The axe still retained the charred stump of a whittled willow haft' (Coombs 1991, 133), which gave a radiocarbon date of *c.* 754 BC. Whilst this could be the result of an accidental loss or displacement due to plough actions or trampling livestock on wet ground conditions, the fact that it had been buried upright whilst retaining the charred remains of its haft might suggest deliberate deposition. The greatest number of axes from a single site comes from Beeston Castle, where five socketed and one faceted axe were excavated. Of these, two complete socketed axes are the most interesting. These were excavated by the Outer Gateway, laying within the body of the first phase rampart, 4 m apart (Fig. 6.11). The distance from each other meant that they were regarded as separate finds. One of these socketed axes was freshly cast, and it is clear that neither could have been accidental loss. The fact these two axes were lying just 4 m apart in fundamentally the same stratigraphic horizon, has led them to be interpreted as deliberate deposition, most probably a foundation deposit (Needham 1993, 48). Of the other four axes found at the site, Needham (1993, 48) interprets them as a mixture of used items intended for scrap

and newly made objects. He does not believe them to be a dispersed hoard, rather a genuine scatter of sequenced losses over time. The entire metalwork assemblage at Beeston Castle is atypical of both Middle and Late Bronze Age settlement assemblages, with no small tools or as already alluded to, no personal or ornamental items. Needham's interpretation that they were solely the result of a specialised metalworking area is possible, as we know scrap metal was in circulation. However, it is just as possible that, along with the weapons found on the site (Table 6.9), these axes have been deliberately deposited on a notable feature in the landscape. This interpretation is strengthened by the fact that hilltop sites have the majority of all bronze axes excavated (Table 6.7; 6.12), and therefore would seem an appropriate place for their deposition.

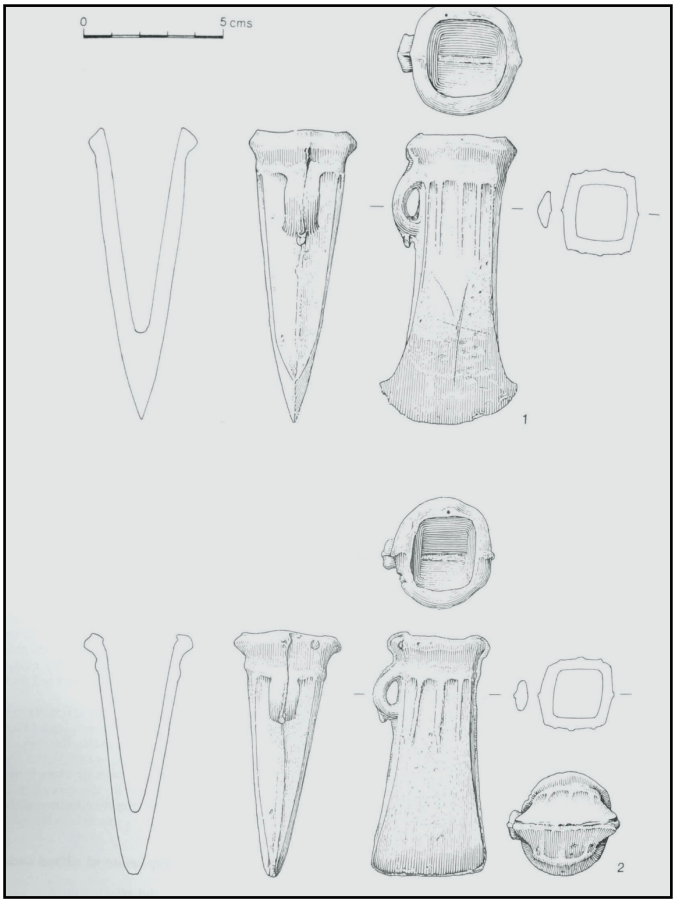


Figure 6.11 – The socketed axes from the Late Bronze Age rampart at Beeston Castle (Needham 1993, 42).

Therefore, it would appear that out of the 27 axes that have been found on hilltop sites in both study areas, 23 are either definitely or highly likely to have been the result of deliberate deposition, either as part of a hoard, or as single items. Of the remaining four axes from hilltop sites, and the one from the non-hilltop site, they are either the result of deposition or associated with metalworking. This fact is significant, as it takes the presence of axes away from being purely utilitarian objects used in everyday life, as many other tools appear to have been, to ones that have subsequently been seen as appropriate for deliberate deposition in these hilltop locations or ones associated with specialised metalworking. As the same is not found in non-hilltop sites, this strengthens the argument for hilltop sites having a special

place within the communities that created them. They were seen as fitting locations for the start of the bronze object's life through the metalworking taking place there, as well as a suitable location for them to end their practical life through their deposition there. However, this deposition did not necessarily mean an end of the object's life to the community that created it, rather that the axe's value was transformed into an abstract or socio-cultural quality that anchored it into the landscape (Fontijn 2019, 158). Another hoard worth briefly mentioning, is the Parc y Mierch hoard of LBA horse harnesses found below the ramparts at Dinorben. Whilst this hoard did not contain axes, and was not found on the hilltop, its deposition close to the site does strengthen the argument for hilltops being an appropriate place to deposit important items (k. Waddington pers. comm. 2021).

6.3.4 Craftworking

To gain an understanding of the social role these tools may represent, the individual types of craftworking industry that they were utilised in was analysed. It is important to note that it was often impossible to know what a particular tool was used for; either they could be used in a number of different ways, or the nature of the tool was unclear. Awls were especially difficult to categorise, as they can be used in textile production, leather working, metalworking, woodworking and even tattooing; they can function as tools that maintain or repair other objects (Spector 1991, 403). Therefore, unless discovered in a context with other evidence that would suggest a particular craftworking industry, they were not assigned to any one industry and not included in this analysis. There are also sites which show the results of certain industries, for example the non-hilltop sites of Huntsman's Quarry, Caldicot Castle Lake and Chapeltrump all have worked wood on site, but no woodworking tools. Worked flint and shale is present at numerous sites, but included below are only the number of cores found showing stone working on site. Antler working is evidenced at Dinorben by the numerous items made from antler in various stages of production, but no tools can safely be assigned to this craftworking industry on this site. The number of sites in each category with craftworking evidence is in Fig. 6.12, which supports the proposition that the non-hilltop sites were the location of the majority of everyday working activities. This is backed up by Table 6.14 detailing the percentage of the tool assemblage that can safely be assigned a particular industry being found in these case study areas.

6.3.4.1 Woodworking and construction

Fig. 6.12 shows that hilltop sites which have definitive woodworking/construction tools outnumber non-hilltop sites (33% in Wales/Marches and 15% in SW England). This is supported by Table 6.14 - the vast majority of tools involved in woodworking and construction (axes, hammers and picks) are found on the hilltop sites (93%/7%). These would all have been utilised for the construction of palisades, ramparts and structures on these sites. However, it would also be necessary to have woodworking tools on settlement sites, and the remarkably well-preserved wetland site of Must Farm, Cambridgeshire, shows just this. All six LBA houses were equipped with a standard kit which included seven axes and two chisels/gouges (Wisemann 2018, 46). As already discussed, it would therefore appear that whilst axes must have been used in settlement sites during their lifetime, it was hilltop sites that were deemed the most suitable location for their ritual deposition.

6.3.4.2 Food and crafts

Food and drink production (encompassing querns, fish traps, cauldron, buckets and ladle/spatula) is significantly better represented in the material culture of non-hilltop sites (45%-15% and 14%), with 51% of the actual assemblage present at non-hilltop sites despite there being half the actual number of such sites. This would signify that food and drink production was occurring much more regularly at the non-hilltop sites. However, it is worth noting that at the hilltop site of South Cadbury, Somerset, fragments of both a bronze cauldron and bronze bucket was found (Barrett *et al*. 2000). These items are part of the Bronze Age 'feasting complex' and were used for serving food and drink at larger social gatherings, most probably feasts (Gerloff 2010; Joy 2014, 342; Needham and Bowman 2005, 95). This is significant, as it demonstrates that this hilltop site was being used for large-scale, possibly ritual gatherings. Tools involved in textile production (loomweights, spindle whorls, needles and weaving combs) were found at 40% of non-hilltop sites, 12% of Wales/Marches sites and none in SW England, with 82% of the overall textile assemblage being found on non-hilltop sites. Therefore, the everyday domestic crafts seem to have been taking place at non-hilltop sites, which is logical if that is where the bulk of the population mainly lived.

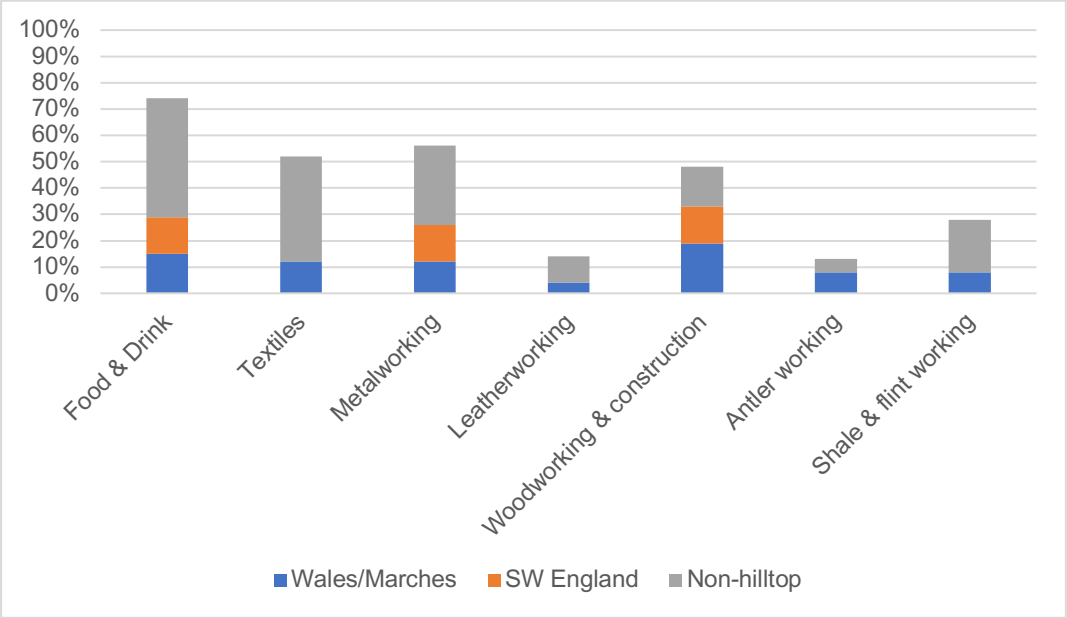


Figure 6.12 – Percentages of sites within the study areas with tools from a specific industry.

	Food/drink N=63	Textiles N=41	Metalwork N=67	Leather working N=21	Woodwork construction N=41	Stone N=12
Wales/Marches N=26	34%	18%	29%	72%	80%	18%
SW England N=14	15%	-	6%	-	13%	-
Non-hilltop N=20	51%	82%	66%	27%	7%	82%

Table 6.14 – Percentages of overall numbers of tools found in all three study areas.

This analysis supports the conclusions reached in the settlement chapter, that non-hilltop sites were the hub of everyday life for these Late Bronze Age communities. Here the bulk of settlement evidence was found, in terms of structure, occupation, agriculture and craftworking. The material culture evidence (Fig. 6.12; Table 6.14) supports this contention, demonstrating that the majority of activity is taking place at the non-hilltop sites. However, these conclusions also show that these everyday activities were also taking place at hilltop sites, just much less frequently. This would again support the supposition that hilltop sites were the locations of communal gatherings at specific times of the year suggested by numerous authors (Brűck 2007; Cunliffe 2005; Driver 2018; Henderson 2007a and 2007b; Hill 1995; Tubb 2011). That these hilltop sites were places of significance to the communities that created them is supported by the fact that bronze, occurring as personal items, weapons and tools, occurs much more often on these hilltops. Therefore, it would appear that the activity occurring on hilltop sites, whilst similar to that at lowland sites, had particular significance and was deemed the appropriate place for the use and deposition of bronze items.

6.3.5 Pottery

'Pots are very closely related to people.'

(Woodward and Hill 2002, 1)

Ceramic was the single most common artefact type found in all three study groups (Fig. 6.13), with 100% non-hilltop sites having ceramics present. Unlike previous categories, SW England had a significantly higher percentage of sites with pottery present when compared to Wales/Marches (61% to 31%). This is perhaps not surprising: during this period as well as the succeeding Iron Age, Wales, northern England and southern Scotland were largely aceramic. Whilst pottery does occur in these regions, it was much rarer and consists of mainly large, utilitarian coarse ware used for cooking (Cunliffe 2005, 117; Harding 2006, 75; Harding 2012: 27). These percentages can mask great differences in the volume of the ceramic assemblages, details of which can be found in Appendix 4. The aim of this section is to try and ascertain some of the social drivers behind the pottery found on sites, rather than providing a typological analysis. Therefore, evidence of community interconnectivity that can be reconstructed from the ceramic assemblages and the functionality of the pottery present will be examined to try and gain some understanding of the social function of these hilltop and non-hilltop sites.

Figure 6.13 – Percentages of sites within all three study areas with pottery present.

6.3.5.1 Interconnectivity

> ‘It is clear that material culture plays a crucial role in creating communities by establishing relationships between individuals and by mediating relationships between groups.’
>
> (Sharples 2010, 92)

An interesting aspect of the ceramic assemblages detailed in excavation reports were the number of close parallels in ceramic assemblages highlighted between sites, similarities that had been identified as significant enough to be commented on in excavation reports (Table 6.15). Most were seen between neighbouring sites; however, a few were a significant distance apart. When plotted, a network of connectivity between sites is revealed, illustrated at Fig. 6.14. As would be expected, the majority of links are between non-hilltop sites (as all of them had ceramic assemblages,) however, links have also been shown between these sites and the hilltop sites of South Cadbury and Norton Fitzwarren (both in Somerset). Fewer links were observed between hilltop sites, with the exception of three hilltop sites linked to The Breiddin, Powys, one of the most developed hilltop sites and also one of the most thoroughly excavated hilltop sites within the dataset. To understand the social implications of these possible links, it is important to first examine the evidence for pottery production and exchange in Late Bronze Age Britain.

Site Report	Reported comparisons	Reference
Brean Down	Combe Hay South Cadbury Norton Fitzwarren	Bell 2015, 121
Cabot Park	Brean Down Combe Hay Chapeltrump 1	Locock *et al*. 2001, 34
Coburg Road, Dorchester	Eldon’s Seat	Smith *et al*. 1992, 36
Combe Hay	South Cadbury	Price and Watts 1980, 22
Darren Camp	The Breiddin	Timberlake and Driver 2006, 98
Hog Cliff Hill	All Canning’s Cross	Ellison and Rahtz 1987, 254
Huntsman’s Quarry	Shorncote Quarry Tinney’s Lane	Jackson and Naptham 1998, 63 Jackson 2015, 138
Llwyn Bryn-Dinas	The Breiddin	Musson 1992, 270
Rumney Great Wharf	Brean Down	Allen 1996, 10
Tinney’s Lane	Coburg Road South Cadbury Brean Down	Best and Woodward 2011, 228
The Breiddin	Cheshire Plain (close to Beeston Castle)	Musson 1991, 119
The Wrekin	The Breiddin	Stanford 1984, 75
Thornwell Farm	Brean Down Chapeltrump 2 Combe Hay	Hughes 1996, 44
Tremough	Scarcewater	Quinnell 2015, 70
Shorncote Quarry	Brean Down Norton Fitzwarren South Cadbury Eldon’s Seat	Morris 1994, 41

Table 6.15 – Parallels in ceramic assemblages in excavation reports for all sites.

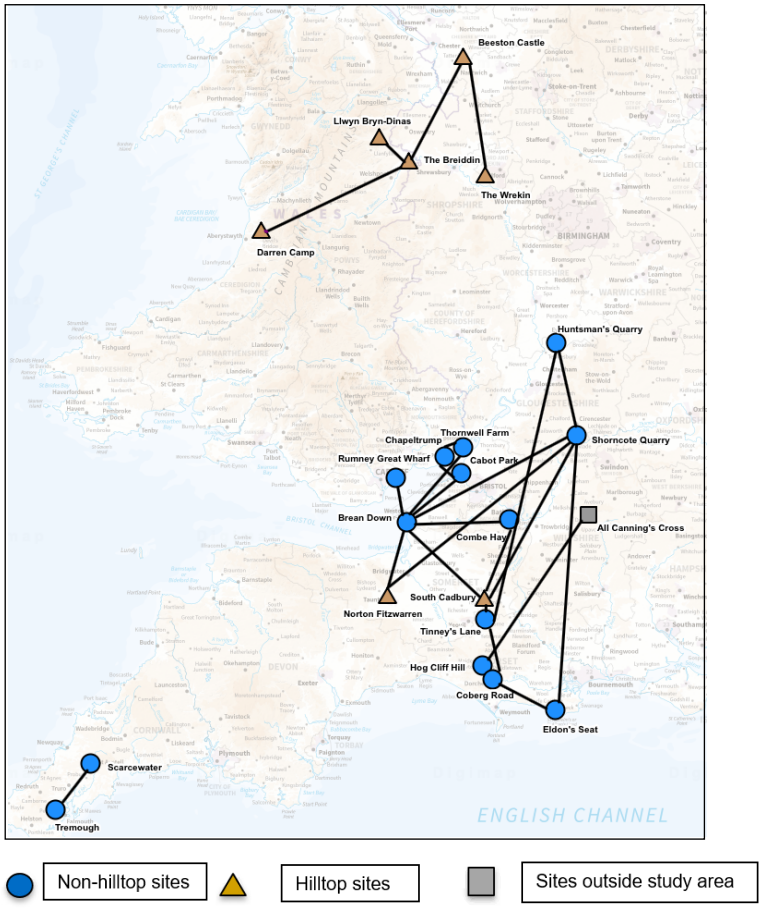


Figure 6.14 – Site ceramic assemblages with close parallels to other sites. © Crown copyright and database right 2020 Ordnance Survey (100025252).

Pottery production in Late Bronze Age Britain suggests a greater specialisation developing from the proceeding Middle Bronze Age, such as the selection of finer clays and tempers, more even finishes to the pots and increasingly sophisticated production techniques (Hamilton 2002,49). However, this does not necessarily equate to production being concentrated in more centralised locations; when the analysis has been done on ceramic assemblages the vast majority comes from local sources. Local is inferred to be when the raw materials – clay and temper, come from sources within 7-10 km of where the pottery itself was used (Morris 1994, 372). Arnold (1981) identified patterns of usage of resources during this period: 29% of communities acquired their potting clay from less than 1 km from their settlement site, 82% from less than 7km. 52% of temper came from within 1 km and 96% from within 8 km. Within this study area, examination of the sources of raw materials has been done on a number of sites, with the vast majority being local. However, there are a few exceptions. At the hilltop site of Norton Fitzwarren, Somerset, one of the two LBA coarseware jars was made using felspathic tuff temper that came from a source 45km from the site (Woodward 1989, 28), links which continued into the Early Iron Age; 50-60% of the pottery assemblage at Norton Fitzwarren dating between *c.* 900-400 cal BC utilised this distant temper source (Morris 1994, 376). A small number of sherds from Beeston Castle, Cheshire originated at The Wrekin, Shropshire (Royle and Woodward 1993, 66/73), and at The Breiddin, Powys, although the vast majority of sherds were from local sources, a few fragmentary ones came from the Cheshire Plain in the vicinity of Beeston Castle (Lynch and Gibson 1991, 119).

Only one non-hilltop site within the entire data set has been identified as having direct evidence for large scale LBA pottery production. Tinney's Lane near Sherbourne (Dorset) had an industrial area comprising of one or more roundhouse, a 4-post structure and bonfire base used for firing ceramics. A large number (13,839) of PDR plainware sherds were recovered, plus 90 perforated fired clay objects interpreted as loom or roof weights. There was also evidence for metalworking taking place on site. Radiocarbon dates for the start (1200-1050 *cal*. BC) to end (1100-950 *cal*. BC) of site occupation demonstrate a relatively short lifespan of up to 220 years, but potentially much shorter (Best and Woodward 2011). The source of the calcite used as temper at the Tinney's Lane site is only 8.5k m from the hilltop site of South Cadbury, and it is likely that many of the vessels from South Cadbury originated at Tinney's Lane as they are very similar in both form and fabric to the Tinney's Lane assemblage (Fig. 6.14) (Best and Woodward 2011, 228).

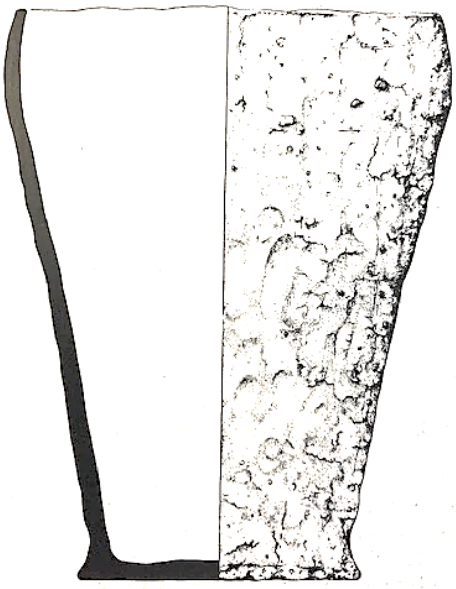


Figure 6.15 – Hook-rim jar from South Cadbury very similar to Tinney's Lane assemblage (Barrett et al. 2000, 339).

The evidence therefore shows that pottery production, whilst becoming more specialised was still, for the large part, a local activity. Evidence does exist of possible trade links in raw material at Norton Fitzwarren, as well as tentative evidence for small scale exchange between a few hilltop sites in the Welsh Marches. What could be the social drivers behind these links and how can they explain the relatively large number of parallels seen within the ceramic assemblages (Fig. 6.14)? Exchange can take two distinct forms that have very different social drivers. Gift exchange creates social debts and relationships - for example in connection to kin relations associated with marriage. Commodity exchange is when items that are viewed as having a corresponding value are exchanged with no social obligations (Sharples 2010, 92-93). Current archaeological literature tends to view gift exchange as the primary mode of exchange in Late Bronze Age society (Barrett and Needham 1988; Bradley 1990; Ellison 1980a, 1980b, 1981; Fontjin 2002; Rowlands 1976, 1980; Sharples 2010; Taylor 1993), however these modes of exchange can be very difficult to differentiate between archaeologically. Within this

dataset there is only small-scale evidence for physical exchange, yet, as Fig. 6.14 demonstrates, there are significant parallels between the ceramic assemblages at a number of sites throughout the region, sometimes at a significant distance. Whilst there is no suggestion that these similarities are the result of actual physical exchange or in many cases even direct contact as some of the distances are significant (the distance between Tinney's Lane and Huntsman's Quarry, Worcestershire is 171 km), there must be processes in place that create these associations.

Souvatzi (2017, 172) observed that 'kinship is a most significant organizing principle of human groupings, the basic matter of social categories in archaeological and ethnographic societies, and an important concept universally'. Ideas surrounding how kinship created and structured ancient societies have been a mainstay in archaeological theory since Levi-Strauss (1969) published *The Elementary Structures of Kinship*. Whilst presenting a unifying approach to social and economic behaviour (Ensor 2011, 220), it has been the subject of much academic debate (e.g. Joyce and Gillespie 2000: Carstan 2004; González-Ruibal 2006). The production of items that are seen and used every day is an evocative representation of self and the society that a person comes from – there is a very real relationship between people and the objects they create (Brück 2006, 297). A recent wide-ranging cross-cultural study, encompassing nineteen communities over several continents and including genealogical and demographic data revealed remarkably diverse kinship relationships between communities. Kinship arrangements, whether matrilocal or patrilocal, were surprisingly flexible, with immigration by individuals into communities an important determinant of kin availability (Koster *et al*. 2019). It is therefore not unreasonable to suppose that during the Late Bronze Age there was contact and movement of people between communities.

The similarities in ceramic assemblages that have been noted within these study areas are possibly the traces of these kinship or community links. The immigration of individuals into communities from ones nearby, or the movement of related individuals between sites, could lead to pottery styles being shared and homogenised, especially as the evidence points to pottery production taking place in the domestic setting. There is also the possibility that community level events led to the sharing of pottery styles. Brean Down (Somerset) is the only midden site within the study area, and has ceramic links to seven sites; three bordering the Severn Estuary (Rumney Great Wharf, Thornwell Farm and Cabot Park), plus Combe Hay, Shorncote Quarry and the hilltop sites of Norton Fitzwarren and South Cadbury. Analysis of the fabric of the LBA ceramic assemblage at Brean Down suggests local sources, although there are similarities to the Cadbury 4 assemblage insofar as both had distinctive calcite dominated tempers, but this was explained by the ubiquity of heavy stone tempering in the area (Woodward 2015, 140).

The suggestion is that during the Late Bronze Age, lowland midden sites hosted large numbers of people for community level events, possibly on a seasonal basis (McOmish 1996; Needham *et al*. 1996; Brück 2007; Waddington *et al*. 2019). The coming together of a large number of people into a location, possibly from an extended territory could explain how the ceramic assemblages came to be so similar. South Cadbury, also in Somerset, has ceramic links to four sites – Tinney's Lane (already discussed as a possible production site), but also Combe Hay, Brean Down and Shorncote Quarry. If hilltop sites were the site of seasonal gatherings, this too could be the driving force behind ceramic similarities seen

between surrounding sites. As with midden sites, if hilltop sites were places where people from a number of surrounding settlements congregated at certain times of the year, this mixing of populations and shared activities, possibly including communal feasting (as already tentatively suggested at South Cadbury by the presence of feasting equipment such as a bronze cauldron and bucket) could lead to the adoption of similar ceramic styles by those present. Whilst the links postulated in this thesis from the similarities in their ceramic assemblages are tenuous, they are suggestive of connections that extended across the landscape and between sites and their populations.

6.3.5.2 Functionality

> 'One of the greatest weaknesses of prehistoric archaeologists over the past century has been their manipulation of pottery primarily as a marker of chronology. The pot makers and the pot users never intended to have their vessels tell time.'
>
> (Morris 2002, 54)

Whilst pottery is undoubtably crucial in the creation of chronology within the archaeological record, these pots are capable of telling us much more. Ceramic vessels were designed and manufactured by prehistoric peoples for a specific reason, to perform functions determined by practical considerations within the bounds of their social organisations (Henrickson and McDonald 1983, 640: Morris 2002, 54). Functional analysis of ceramic assemblages - how people might have actually used these pots, gives us information beyond the *technological* (how the pot was made) towards the *social* (what they were used for), informing us a little about how they were living their lives. Henrickson and McDonald (1983) took archaeological and ethnographic examples of the uses vessels were being put to in relation to their forms, identifying main activity types. Using this information, the first major study of the function of pottery in British Iron Age studies was Woodward's (1997) examination of the ceramics from South Cadbury, followed by Pope's (2003) investigation of Iron Age ceramic assemblages from Dorset. Combined with recent scientific advances in the molecular and isotopic signatures that can be obtained from both visible and absorbed residue on pottery (Roffet-Salque *et al.* 2017), the study of archaeological ceramics has gone far beyond just creating chronologies.

Functional ceramic analysis examines the relationship between the level of restriction of the opening of a vessel (its orifice) and its use – resulting in four main activity types that the pot could be used for (Pope 2003,1). There are limitations to this analysis – site assemblages are not always a good indicator of what the activity on that site actually was. They might represent the final stages of activity of the site, perhaps reflecting depositional practice rather than actual use. The survival of only certain elements within the original assemblage, the selective retrieval of sherds as well as the inability to include non-ceramic elements such as wood or basketry (*ibid*., 2), certainly all contribute to a less than perfect understanding of site activity. That notwithstanding, Functional Ceramic Analysis (FCA) does contribute to the interpretation of the social activities taking place on sites from the uses the pots were being put to. The relationship between the vessel's body and its orifice dictates its form (*ibid*., 2), and the accessibility of the pots content, via its orifice, is considered to be the main factor dictating its use.

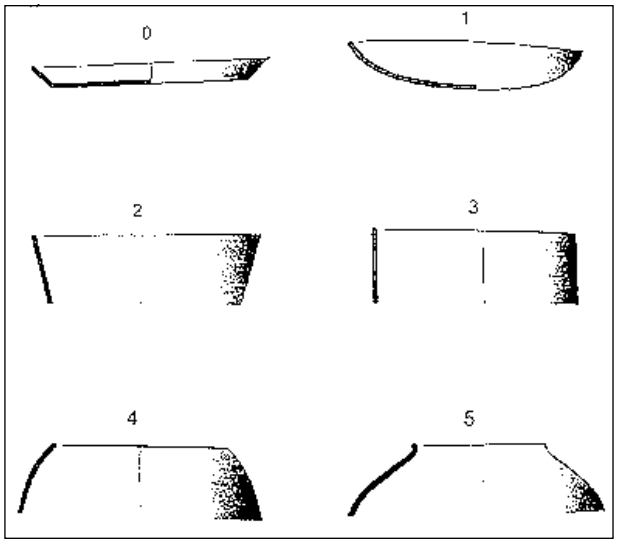


Figure 6.16 – Restriction scheme used in Functional Ceramics Analysis (Source: Pope 2003).

Scale of Restriction	
Form 0	Orifice > base; height < 1/3 maximum diameter; minimal walls
Form 1	Orifice = maximum diameter; height <? width
Form 2	Orifice = maximum diameter; height > width; 'flaring walls'
Form 3	Orifice = maximum diameter: height > width; vertical walls
Form 4	Orifice < maximum diameter; height > width
Form 5	Orifice ≤ 2/3 maximum diameter; height > width

Table 6.16 - Scale of Restriction measurements used in Functional Ceramics Analysis (Pope 2003, 2)

The restriction scheme used in FCA (Fig. 6.16; Table 6.16) details vessel types with minimum restriction (Forms 0 and 1), limited restriction (Form 2 and 3), medium restriction (Form 4) and maximum restriction (Form 5). Using the ethnographic evidence derived from Henrickson and McDonald (1983), four basic functional types were developed based on the vessel restriction; vessels for *serving* (Forms 0 and 1), *processing* (Forms 2 and 3), *cooking* (Form 4) and *storage* (Form 5). There is also the possibility that Forms 2 and 3 could also be used for drinking activities (Pope 2003, 3). Both Woodward and Pope's FCA analysis took place using large, securely dated ceramic assemblages, enabling a hierarchy of activities to be created for these sites. The LBA ceramic assemblages from the hilltop sites in these case study areas, with the exception of a few sites, are very small. Where there are larger assemblages, not all sherds are published or able to be analysed, mainly due to their fragmentary nature. When they are, the manner of their publication is varied. For example, at South Cadbury, although an analysis of form has taken place, the results are published only as a percentage of the overall assemblage, rather than actual numbers, which means it has been excluded from Form and Function analysis (Table 6.19) (Woodward 2000). Five hilltop sites had assemblages that could be analysed, so the same number of non-hilltop sites was chosen for comparison. Therefore, the functionality of vessels from these study areas discussed below, whilst as comprehensive as possible, represents only a small sample of the

ceramics present. The results give a snapshot of activity on both hilltop and non-hilltop sites; however, this is by no means definitive.

	Form 0/1 Serving	Form 2 Processing	Form 3 Processing	Form 4 Cooking	Form 5 Storage
Beeston Castle N=2	-	50%	-	50%	-
The Breiddin N=23	5%	47%	11%	32%	5%
South Cadbury	4%	19%	12%	-	-
Ham Hill N=22	79%	21%	-	-	-
Norton Fitzwarren N=8	12.5%	-	37.5%	50%	-

Table 6.17 – Functional Ceramics Analysis for hilltop sites (n=55 excluding South Cadbury).

	Form 0/1 Serving	Form 2 Processing	Form 3 Processing	Form 4 Cooking	Form 5 Storage
Dainton N=5	17%	33%	50%	-	-
Eldon's Seat N=81	16%	21%	38%	16%	9%
Stackpole Warren N=9	22%	-	-	67%	11%
Shorncote Quarry N=49	3%	16%	3%	62%	16%

	Form 2/3 Processing	Form 4 Cooking
Coburg Road N=9	78%	22%

Table 6.18 – Functional Ceramics Analysis for non-hilltop sites (n=136).

	Form 0 Serving	Form 1 Serving	Form 2 Processing	Form 3 Processing	Form 4 Cooking	Form 5 Storage
Hilltop sites N=55	0%	51%	24%	4%	20%	2%
Non-hilltop sites N=136	1%	4%	21%	28%	35%	11%

	Serving	Processing	Cooking	Storage
Hilltop sites N=55	51%	27%	20%	2%
Non-hilltop sites N=136	6%	48%	35%	11%

Table 6.19 – Percentages of each Form and Functional types for both hilltop and non-hilltop sites.

There are limitations to the Functional Ceramics Analysis carried out on both hilltop and non-hilltop sites within this study. The numbers used in the analysis are those where the excavators could identify the form of the vessel, they are by no means an exhaustive representation of the forms of vessels from each site, as large parts of each assemblage were too fragmentary for any analysis of their form to take place. The difference in numbers (55 hilltop and 136 non-hilltop) means that each hilltop vessel has a greater weighting when calculating percentages, as can be seen with the large number of bowls at Ham Hill increasing the overall scores for serving dishes despite bowls being relatively rare at other hilltop sites. The aceramic nature of much of the north of England and Wales, the inability to consider the use of organic materials for some functions, for example the use of wooden bowls for serving, means it will not be a true representation of activity on the site. The base of a wooden container was recovered from Buckbean Pond at The Breiddin, and whilst Iron Age in date (430 ± 60 BC), does suggest that wooden bowls and containers could have been in use at the site in the Late Bronze Age (Britnell and Earwood 1991, 162). Excavations at Must Farm demonstrate how common wooden items must have been at Late Bronze Age settlements, with wooden buckets, bowls, containers, and platters all being found (http://www.mustfarm.com). However, all that notwithstanding, the analysis done here does help to understand what was taking place at both site types, and whilst not exhaustive, is certainly indicative of activity. It helps build up a picture of whether these sites had different functions for the communities that created them.

The non-hilltop sites have a more even spread of function types, which as the evidence investigated so far would seem to support, is understandable as they were the main living and agricultural settlements for the bulk of the population during this period. The figure for serving vessels is low, and it may be here where organic vessels played a larger part. Late Bronze Age wooden bowls have been found at Gwithian, Cornwall (Nowakowski *et al.* 2007, 31) and Caldicott Castle Lake, Gwent (Parry 1990, 10) with an Early Iron Age one found at Buckbean Pond at The Breiddin (Musson 1991), which suggests

that their use could have been more widespread. The use of ceramics was universal in these non-hilltop sites, and used in all areas of food preparation and serving, which would be expected if this is where people lived for most of the time. This reinforces the tools analysis, where 65% of non-hilltop sites had tools involved in food production. There is nothing within the Functional Ceramics Analysis of these ceramic assemblages that would suggest that they represent anything other than normal domestic life.

The analysis of hilltop sites shows a different pattern of use. If, as is believed by many academics, hilltop sites were places where the population came together to attend seasonal gatherings (e.g. Hill 1995; Cunliffe 2005; Brück 2007; Henderson 2007a, 2007b; Driver 2018), it would seem reasonable to expect a large number of serving vessels to be found within all the ceramic assemblages, as is the case at Ham Hill, Somerset, and also at midden sites such as Potterne and East Chisenbury (Morris 2000; Raymond 2010; Waddington *et al*. 2019). However, the high percentage of vessels used in processing and cooking food on hilltop sites, and low percentage of serving vessels at the other four hilltop sites analysed here (The Breiddin, Beeston Castle, South Cadbury and Norton Fitzwarren), makes more sense considering the aceramic nature of Wales/Marches at this time. If scarce ceramics were present at these sites, it can be argued that they would have been used almost exclusively for food processing and cooking (Cunliffe 2005, 117; Harding 2006, 75; Harding 2017, 27), with organic vessels, probably made of wood, being used for eating and drinking. The vast majority of the non-hilltop sites occur towards the south of the case study area away from the aceramic zone where ceramics were more common, the site furthest north being Huntsman's Quarry, (Worcestershire). Indeed, for much of the Welsh border area, most identified Late Bronze Age settlements are those on hilltop sites (Halstead 2011, 66). There are more hilltop sites in the Wales/Marches study group (26) compared to southwest England (14), so the aceramic nature of Wales and the Welsh borders region will affect the results. At hilltop sites in the more ceramic southern regions (e.g. Ham Hill and Norton Fitzwarren), serving bowls were more common. It could therefore be suggested that their relative scarcity in the Wales/Marches region was not due to serving bowls not being used, more that serving bowls made of organic materials, and therefore archaeologically invisible, were more prevalent in the Wales/Marches grouping.

The Functional Ceramic Analysis of the hilltop ceramic assemblages suggests that food preparation and cooking were the main function, accounting for a large percentage of the functionality analysed which would be in keeping with these hilltop sites being used for large-scale, community level gatherings. However, only 15% of sites in the Wales/Marches group and 14% of southwest England had food preparation tools as opposed to the higher level at non-hilltop sites (45%). The number of saddle querns found at both hilltop groups combined equal the number found on non-hilltop sites alone (18 in total for each group), despite the fact there are twice the number of hilltop sites (40 – 20). If the hilltops were places of sporadic occupation, then it would make sense that heavy objects such as querns and large storage containers might not necessarily need be taken there. If they were without a large permanent population, there may not have been the necessity for large storage vessels. These would have been heavy when full, and difficult to manoeuvre (Woodward 1997; Pope 2003, 4), which would have been a problem for a temporary population. This would suggest that whilst food preparation was obviously taking place, it may be that it was of a more transitory nature. It is therefore possible that

the ceramic assemblages at hilltop sites could support the proposition that these were the sites of large-scale gatherings, originating from the surrounding local area as the ceramic fabrics are almost entirely from local sources. The functionality of the ceramics found at hilltop sites supports the proposition that the settlement patterns of both hilltop and non-hilltop sites were markedly different.

6.4 SUMMARY

The examination of the material culture found on both hilltop and non-hilltop sites has broadly followed the evidence in the settlement chapter. The higher percentages of sites with both personal items, and especially tools, reinforce the suggestion that it is the lowland, non-hilltop sites where the population lived and worked for the majority of the year. The domestic industries involved in everyday living – predominantly food and textile production - seem to be taking place on most of the non-hilltop sites, but are evidenced at only at a few hilltop sites. Likewise, the more industrial activities – metalworking, woodworking, leatherworking and flint tool production - are all more widespread on the lowland sites. However, material culture evidence does begin to suggest that whilst the lowland, non-hilltop sites were the places of normal, everyday living, these upland hilltop sites may have been the sites of something different.

If the settlement evidence shows that the occupation of these hilltop sites was of a much more ephemeral nature, the items found there would seem to suggest that they were sites of significance to the populations that built them. The nature of the personal items found on hilltop sites – ornaments, toilet articles and clothing fasteners - show that whilst the occupation of the sites may well have been transitory, an individual's appearance whilst there was nevertheless important. The fact that the majority of the weapons found within all the study areas were found in these hilltop locations also indicates significance. Whether the weapons were deliberately deposited, worn to defend or impress or were the result of production on the site, it is surely suggestive of an importance to the site that went beyond the domestic. Even the fact that the most common industry to be found on these hilltop sites is metalworking is meaningful. As already discussed, metalworking should never be seen as purely 'utilitarian' (Helms 2009, 155; Yates and Bradley 2010, 42). The fact that these hilltop sites were considered an appropriate place for metalworking to be taking place, above all other industries and perhaps at times of communal gatherings again speaks to a significance to these sites.

The material culture assemblages of hilltop sites do seem to imply, however, that whilst these sites were generally sparsely occupied, the type of occupation taking place there was different to purely domestic living. The ceramic functionality would suggest that food preparation and cooking, and possibly drinking activities, were important activities taking place. The fact that there are significantly lower levels of general food preparation tools on hilltop sites might also be suggestive of places where consumption, not production, was the main goal. This is also evidenced by the increased numbers of serving bowls at Ham Hill and bronze feasting equipment at South Cadbury. Evidence for textile production is found at 55% of all non-hilltop sites, but is hardly found at any hilltop site (7% of sites in Wales/Marches and no sites in SW England). Whilst the creation of yarn using a spindle whorl is an activity that could easily take place on the move, weaving actual textiles using a loom is a lot more

cumbersome activity. If communities were travelling to the hilltops for short term gatherings, it would not be worth the considerable effort required to move bulky looms.

Despite the fact there is much less material culture found on hilltop sites, do the assemblages found contribute to the investigation of regionality between the two hilltop study areas? As was the case with the settlement evidence, the Wales/Marches sites have much more material culture present. Again, this may be partly due to excavation bias, as they all had particularly large areas of excavation in the internal areas of the enclosures, and the fact that in SW England 50% of the sites have little or no excavation as opposed to 25% of the Wales/Marches group – however both study groups do have similar levels of good or excellent evidence. There are higher levels of personal items, tools and considerably more bronze found in Wales/Marches. However, almost all the evidence within this group comes from the same three sites that dominated the settlement evidence – Dinorben, Beeston Castle and The Breiddin. Outside of these three sites, the evidence does appear to be much reduced. Two of these sites (Beeston Castle and The Breiddin) have tentative ceramic links to other hilltop sites in the region, but at a very small scale. This weighting of evidence towards these three sites does seem to strengthen the argument that different processes may be in place at these sites as opposed to the majority of sites within that study area. It is possible that these sites were playing a different societal role than those less developed sites in their vicinity, which led to the differences in material culture found there.

SW England has far less excavated material culture, and what has been found is weighted towards Somerset, and South Cadbury in particular, making it similar to the three more developed sites in Wales/Marches. Apart from pottery, almost no material culture has been found in Cornwall. Whilst this is probably at least partly due to excavation bias, Dorset also seems to have sparse material culture assemblages (with the exception of ceramics). As already highlighted in the settlement chapter, there is a case to be made for higher levels of activity taking place in Somerset at this time. This area had increased levels of settlement and occupation, and whilst South Cadbury dominates the material culture evidence, both Norton Fitzwarren and Ham Hill also have reasonable assemblages. The only gold found on any hilltop sites was discovered at South Cadbury, and both South Cadbury and Norton Fitzwarren have ceramic links to the surrounding non-hilltop settlement sites. Whilst it is certainly true that South Cadbury, like Beeston Castle, Dinorben and The Breiddin, could constitute a different, more developed class of hilltop site, the links that South Cadbury has with the surrounding landscape does seem to be more developed than with the Welsh sites. Cunliffe (2003, 51) suggests sites like Norton Fitzwarren were akin to other more developed hilltop sites further east like Ram's Hill (Berkshire) and Harrow Hill (Sussex) in that they played an economic, social or religious function within their region during the Late Bronze Age, and this is a theme that will be explored more fully in the next chapter.

6.5 CONCLUSION

The material culture data presented in this chapter strengthens the case made in the settlement chapter that upland hilltop sites were serving a different function to those settlements found in lowland, non-hilltop areas. These lowland sites appear to be the location of the majority of evidence for everyday living. Domestic activities such as food preparation and textile production occur far more on these sites,

as does craftworking and agriculture. The hilltop sites, whilst having evidence for domestic activities such as food production, lack the range of activities of these lowland sites. However, there is evidence for the 'special' nature of these sites. Axes are found almost entirely on hilltops, often in positions of deliberate deposition. Weaponry is much more common on hilltop sites, possibly in association with metalworking, but probably ritually broken and deposited there. Large scale cooking activities seems to be the prime use of the ceramics found on these sites. This evidence, taken together, seem to suggest that hilltop sites had a very particular function within the societies that created them: places where people came together from local communities to celebrate, feast and impress.

CHAPTER SEVEN

LATE BRONZE AGE HILLTOP SITES – THE WHO, WHAT, WHERE, WHEN AND WHY

It is generally believed that Aristotle, in his *c*. 350 BC book *Nicomachean Ethics*, was the first to describe the elements of circumstance – the *who, what, where, why* and *when* that would later become the basis for academic research, police investigations and journalism (Sloan 2010). Having investigated the environmental, landscape, settlement and material culture evidence for Late Bronze Age hilltop sites in this thesis, I believe that there is no better way to bring it together than to use Aristotle's tried and tested formula, albeit in a slightly different order. This will enable a comprehensive examination of the evidence presented so far, leading to a greater understanding of the roles that these monumental structures could have played for the communities that built them. The *who, what, where* and *when* will be examined first, culminating with the most important element – *why* communities came together in the Late Bronze Age to build these monumental structures.

7.1 *WHO* BUILT THE LATE BRONZE AGE HILLTOP SITES?

This is the shortest of the elements to be examined here as it has not been the main thrust of this thesis, however, it is worthy of a short examination of the most recent developments in the field to set in context the creation of these hilltop sites. As we have seen, the beginning of the construction of these hilltop sites in the Late Bronze Age was a new development for the populations that built them. When significant developments like this occur, the temptation has been to assign them to an influx of incomers bringing new ideas with them, the best example being Hawkes's (1931) ABC System. Peggy Piggott was already questioning this theory by the 1940s and Roy Hodson effectively took it apart in the 1960s, however, the debate about whether human movement is the driving force behind cultural developments is still very much alive today (Booth 2019; Furholt 2017; Haak *et al*. 2015). Scientific advances, such as the ability to examine strontium and oxygen isotopes within ancient tooth enamel to establish where an individual spent their childhood (Budd *et al.* 2001; Parker Pearson *et al*. 2019) and the examination of the DNA of ancient individuals (Haber *et al.* 2016), have led to interesting discoveries. The most significant has been the Olalde *et al.* (2018) investigation of the DNA of 80 Late Neolithic and Early Bronze Age inhabitants of the British Isles. This has led to the discovery that the spread of the Early Bronze Age Beaker Complex into the British Isles from Continental Europe would eventually lead to the replacement of >90% of the British Neolithic gene pool within only a few centuries. This has created a perception that these palaeogenetic studies indicate a deterministic link between genetic and cultural changes i.e. the spread of the Beaker Complex into Britain was directly facilitated by mass migration (Booth 2019, 592). In reality, palaeogenetic studies such as Haak *et al*. (2015) and Olalde *et al*. (2018) say very little about the mechanisms of how these demographic and cultural changes occurred, only that mass migration is the simplest explanation of how migrant populations come to outnumber indigenous populations so quickly (*ibid.)*. There are many alternative explanations such as sample bias: geographical, preservational or cultural biases in palaeogenetic samples leading to the possibility that they are not truly representative of the past populations (Booth 2019; Furholt 2017). It is perfectly possible that this demographic shift happened because the Late Neolithic population of Britain was very

small as opposed to the incoming migrant groups being large, or disparities in the fertility of the two populaces, perhaps driven by lifestyle or social organisation meant a small-scale movement across the Channel would lead to a disproportionally large change in the genetics of the succeeding generations (Booth 2019, 592).

Evidence also now exists of significant movement within the British Isles itself during this period. An analysis of the strontium and oxygen isotopes within the teeth of the Early Bronze Age Boscombe Bowman, found within the vicinity of Stonehenge, shows that he spent his childhood further north and west, either in Scotland, the Lake District, Wales or SW England (Evans *et al.* 2006). These findings have been mirrored in a project looking at ancient genomes in France which detected a movement of people with Anatolian ancestry into France during the Neolithic, followed by movement from the Pontic steppe region associated with the Bell Beaker Complex at the start of the Bronze Age (Brunel *et al*. 2020, 12793).

These combined studies seem to show that the Early Bronze Age in Europe was a time of population upheaval and movement; is this also seen during the Late Bronze Age which might be in part responsible for these developments in settlement architecture? Whilst it is true to say that less work has been done in this field for the end of the Bronze Age in Britain, Budd *et al.* (2001) looked at the isotope evidence from the skeletal remains of 53 individuals from the Neolithic to the medieval period. The Bronze Age and Iron Age individuals from a cemetery in West Heslerton, North Yorkshire showed that they had been sedentary, living and dying in the same general area. Jay *et al*. (2013) investigated the Arras Culture cemeteries of East Yorkshire, long believed to represent immigration from the Paris Basin. In reality, the majority of individuals from the substantial cemetery at Wetwang Slack had isotope ratios indicating a settled community that lived and died in the local area of the Yorkshire Wolds. Only a few individuals from the nearby sites of Garton Station and Kirkburn seem to have spent their early childhood away from the Wolds but are unlikely to have come from outside Britain (Jay *et al.* 2013, 486-487). It was not until the later Romano-British period that the evidence of migration was found with individuals who possibly originated from the western Mediterranean and North African area being excavated in a Winchester cemetery (Budd *et al.* 2001, 133-134). Acknowledging that this is a very small sample, it does suggest that after significant Early Bronze Age migrations, populations remained largely static until the Romano-British period. Again Brunel *et al*. (2020, 12795) supports this, demonstrating no major demographic shifts between the Bronze Age and Iron Age in France. This in turn validates both Piggott (1948) and Hodson's (1962, 1964) contention that the building of these hilltop sites, developed and enclosed in the Late Bronze Age, was done so by the indigenous populations and were not a result of wholesale population migration from Continental Europe as Hawkes had asserted. However, aDNA is a developing field, so it is probably safe to say that with the advancement of this technology and more ancient DNA being examined, there is scope for this to change.

7.2 *WHAT* WERE THESE LATE BRONZE AGE HILLTOP SITES?

In many cases it is hard to get an accurate idea of what these Late Bronze Age hilltop sites actually looked like, as the remains of most are ephemeral and often built upon by later Iron Age structures.

However, it has been possible to build up some idea of what these hilltop sites were like from the excavated evidence and from comparison with the non-hilltop sites. What has become apparent is that it was the enclosure of the hills, either by ramparts or palisades, that seems to have been the main driver for their construction. Securely dated Late Bronze Age boundaries have been found at 50% of sites in Wales/Marches and 43% in SW England, and it must be borne in mind that for many of the hilltop sites included in this study there has been little or no excavation, or excavation occurred at a time when techniques were not advanced enough to pick up more elusive evidence for structures such as palisades that could not be easily seen because of later disturbance and truncation. Therefore, it is quite possible that many more sites may have as yet unknown evidence of Late Bronze Age enclosure. Whilst the fact that 40% of non-hilltop sites have some form of enclosure too might seem to negate the argument that enclosure at hilltop sites was special, it does in fact strengthen it. All the enclosure at non-hilltop sites is generally functional rather than monumental - ditches, fences and banks. Only two have palisades, and none have ramparts. These non-hilltop sites have been very well excavated, so there is little chance of further enclosure being present. Therefore, it is the monumentality of the enclosure at the hilltop sites that seems central to their creation – these were often structures that were designed and built to be seen, described as *Beacons in the Landscape* by Brown (2009) and 'conspicuous features on the landscape skyline' by Hamilton and Manley (2001, 7). The communities that created them invested a great deal of effort in their construction, effort to monumentalise the enclosure that was not duplicated in the settlements where the bulk of the population lived most of the time. Finney (2006) estimates that the excavation of a hillfort ditch per linear metre would have removed four times the amount of material than that of a settlement ditch (Brown 2009, 35). At Penycloddiau (Flintshire) Mason and Pope (2019) have reconstructed the building methods for the ramparts and have discovered that the phasing of construction (foundation build, rampart build up and mortar capping) enabled relatively rapid construction. Their estimation is that with an absolute minimum of 30 people working in three groups, the Phase 4 hillfort rampart (probably Earliest Iron Age in date) could have been constructed in as little time as three summers. This is an incredibly short time scale for a site this size (it encloses an area of 21 hectares) and would have necessitated large-scale community co-operation to enable this to happen. The evidence from The Breiddin (Powys) for possible gang-working in the creation of the ramparts (in the form of a slightly wandering line with shallow 'scallops' suggesting patterns of laying-out for gang-working) suggests that they may have been built by different sections of society coming together to construct a shared space (Musson 1991, 176). It may be the case that for these communities, it was the act of enclosure that was just as important as the physical structure that they were creating.

If the evidence for monumental enclosure would suggest that these hilltop sites were built to be seen, the sparse evidence for structures within them seems to indicate that the communities who put so much effort into their creation did not actually live there on any permanent basis. Unlike the non-hilltop sites where 70% had good evidence for structures, hilltop sites look to have been very lightly populated. An average of only 30% of hilltop sites having any structures, and even on sites with plentiful Late Bronze Age evidence such as The Breiddin or Beeston Castle, structures, where they do occur are often very few in number. This is also true of sites outside those detailed in this study: Jobey (1976) observed that whilst Traprain Law (East Lothian) had plentiful material culture, it had 'restricted structural evidence'.

It is possible that this is the result of excavation bias in the past – a number of hilltop sites were excavated in a time when the focus was on the ramparts and not on the interior. However, as already stated, even where there has been thorough excavation, very few actual structures have been found dating to the Late Bronze Age. It therefore seems apparent that these hilltop sites, despite their size, were not designed to have a large permanent population. Whilst it is certainly possible that evidence for stake-built or organic-walled structures have not been located, or was missed by early excavations, the presence of such buildings would still not indicate a full-time population (see Pope 2015). These are exposed sites; living there in the depths of winter in a flimsy post-built structure would have been an extremely uncomfortable proposition. However, whilst there is scant evidence for what might be considered permanent dwellings, there is evidence for occupation on these sites. In Wales/Marches overall, 58% of sites had general occupation evidence (e.g. Bryn Maen Caerau, Dale Fort, The Breiddin and Beeston Castle), as did 43% of sites in SW England (e.g. South Cadbury, Poundbury and Chalbury). However, a closer look at the data is revealing: Table 7.1 shows that the more thoroughly a hilltop site has been excavated, the higher the likelihood of finding general evidence of occupation. Therefore, as many of these sites have not been thoroughly excavated or even excavated at all, it is probable that many more sites in Wales/Marches and SW England were occupied than the 58% and 43% figures would suggest.

Excellent	**Good**	**Fair**	**Poor**
100%	88%	41%	0%

Table 7.1 – Percentages of all hilltop sites combined (n=40) in each data quality category with occupation evidence.

On some of the more developed sites such as The Breiddin (Powys) and South Cadbury (Somerset), midden deposits have been located built up on the outer edges of the site, with similar deposits having been found on other developed Late Bronze Age hilltop sites outside this study area (Waddington 2009. 137). Whilst none of these deposits are anywhere near as extensive as those at traditional midden sites, they could indicate that similar activities were taking place at these hilltop locations as the midden deposits themselves are similar in nature. At The Breiddin, the midden is made up of dark soil, sherds of LBA coarseware, flecks of charcoal and burned bone (Musson 1991, 61), all suggesting domestic activity rather than animal-based 'mucking-out' type activities. This material was probably deposited on the natural hillslope and spread through natural erosion, although Musson (1991,61) also states that it could have been collected in two underlying pits (*ibid.*). It is generally accepted that at midden sites such as Potterne (Madgewick *et al.* 2012) and East Chisenbury, (McOmish 1996), a significant number of people came together for large-scale social events that included feasting between the 10th–6/5th centuries BC. Therefore, it is possible that these same types of activities were taking place at the hilltop sites on a more transitory basis that did not necessitate permanent dwellings being built. The reasons for these possible gatherings will be investigated further in the *why* section of this chapter.

What then were these Late Bronze Age hilltop sites? The evidence presented in this thesis suggests that in the Late Bronze Age communities came together to build monumental structures, comprising palisades or ramparts, or in some cases both, on hilltops. They were structures designed be seen from

a distance, visually connecting them to the population that lived in the surrounding area. It is possible that the building of the enclosure was a task undertaken by different sections of the community. However, once built these sites were never meant to be the main population centres for the community – this continued to be the lowland non-hilltop settlement sites. The occupation of these hilltop sites would seem to be sporadic and not accompanied by permanent structures, or at least took place in structures that are largely archaeologically invisible to us today (Guilbert 1975a; Pope 2015). However, this occupation did result in deposits consistent with people inhabiting these hilltops at least occasionally – the detritus of everyday living being found on roughly half of all hilltop sites, with the possibility that it would be found on many more sites if they were more thoroughly excavated. Whilst on some sites this occupation detritus does not indicate heavy occupation, on others it is significant enough to be described as midden deposits. In summary, during the Late Bronze Age communities began to enclose hilltops but didn't live in them on a permanent basis. Nevertheless, these were not empty spaces but ones that seem to have been lightly occupied, possibly indicating seasonal occupation.

7.3 *WHERE* WERE LATE BRONZE AGE HILLTOP SITES LOCATED?

The choice of location of these hilltop sites would have been made using a whole number of parameters, many of which are cultural and therefore almost impossible for us to accurately reconstruct archaeologically three thousand years later. They were new developments within the communities that built them, away from the settled landscape of small clusters of roundhouses within formalised agricultural settings that had characterised the Middle Bronze Age (Brück 2007, 25; Burgess 1980a; Lawson 2000, 271). We also know that the Late Bronze Age saw a significant increase in the range and variety of site types as a whole: ringforts, middens and timber platforms all being new developments alongside these hilltop sites (Brück 2007). However, lowland settlement sites, where the majority of the population lived, stayed similar in form to previous Middle Bronze Age types, so hilltop sites were not a break away from the norm, more an addition to it.

Within the two case study areas the impetus for both locating and building these sites showed both similarities and differences in the choices made by the communities that created them. The most obvious similarity is that in most areas they were built in locations that could be observed from many miles around them. They were built to be seen, but it is equally true to say that they were built to be accessible for the communities that created them. Hamilton and Manley (2001, 31) called them 'landscape co-ordinators…. concerned with visual and physical access to varied landscapes.' However, it is worth remembering that Late Bronze Age hilltops enclosed solely by palisades, which is hugely demanding in terms of the amount of good timber needed, may not have been as visually impactful if the surrounding area was still uncleared and heavily wooded.

In the Wales/Marches area, there are variations in whether these were at the most dominant locations or more mid-range ones, however for the most part these sites occur in locations that can be seen for some distance. The AOD analysis in Chapter Four shows that there are regional differences e.g. in Powys/Shropshire the sites are built on commanding hills at the top end of height for the surrounding area (e.g. The Wrekin and The Breiddin) whilst in Ceredigion they are on high ground but more in the

mid-range (e.g. Castell Rhyfel). In SW England the sites in Somerset are all at the top end of the AOD for their area (e.g. Ham Hill and Norton Fitzwarren), whilst those in Dorset are more mid-range (e.g. Poundbury). The main difference comes with coastal sites; in both Pembrokeshire/Carmarthenshire and southern Cornwall the enclosed sites were created with an entirely different set of parameters. Whilst in the moorland areas of the northern half of Cornwall, sites such as Castle An Dinas are at the top end of the AOD for the area, those in the south of Cornwall, especially the sites on the West Penwith peninsular, are all at the lowest point. The sites in both these areas show a degree of cultural interconnectivity not seen with inland sites that are often geographically much closer to them. It is probable that the maritime links of these Late Bronze Age promontory sites either side of the Bristol Channel set them apart from other sites examined here. Whilst the inland sites seem built to survey their surrounding landscapes, the coastal sites seem to instead have been built to facilitate interaction across the water. Murphy (2018) discusses the possibility that these coastal sites were not permanent settlements, but sites with a seasonal or intermittent function. Their exposed and dangerous positions meant that they could have had either a symbolic function or that they operated as seasonal locations for the control and use of coastal and maritime resources. It can be argued that the urge to build sites that can be seen was just as strong in these locations – they were just designed to be seen from the sea and not from the land. Site location seems as much about the journey as the place.

Clues to the possible function of Late Bronze Age hilltop sites can be gleaned from their location. In Wales/Marches, the proximity of water to the site seems to have been of high importance to the communities that built them. It is probable that this was because the activities taking place at these sites were ones that needed a good availability of water that was not dependent on chance and human action, such as collecting rainfall in bags. People and cattle will need a large amount of water to sustain them – cattle need access to 40-50 litres of water per day (Cunliffe 2000, 69), and people need at least 15 litres (UNHCR 1992). As modern studies in rural areas of India and Africa have shown, women can carry between 15-40 litres from sources within 1 km of their dwelling every day (Sharma and Singh 2012), and children spend two thirds of their day transporting water from sources back to their homes (Hemson 2010). Combined with the enclosure of the hilltops and the lack of evidence for large-scale permanent human occupation, it would suggest that pastoral activities lay at the core regarding location. Corralled animals and the people associated with them will need continuous access to fresh water whilst on site, and it would presumably be important that these water sources were close enough to minimise the work necessary to fetch the required water each day, or to walk cattle to the water source on a daily basis. As already noted, these activities were probably cyclical, as the sites seem to indicate transient occupation, but even if people and their herds only visited seasonally, the work necessary to keep animals watered would still have been significant.

The data indicates that riverine locations were more important to the communities in Wales/Marches, with twice the number of sites located close to rivers than in SW England (31% as opposed to 14%). Rivers provide a good source of water, but also facilitate travel in the more mountainous terrain of the area, as opposed to the more benign landscape of most of SW England. Easy communication between widely spread populations makes possible all forms of social interactions, and good access to main communication routes would have helped facilitate travel to these sites for people coming together for

their seasonal gatherings. However, controlling the routes that enable this communication to take place can also enable the management of what was happening. Similar to the timber platforms found in the wetlands of eastern England, hilltop sites in Wales/Marches located next to major rivers might have exercised a degree of control over traffic moving up and down these essential watercourses, if it were socially required. When we consider that these Late Bronze Age people were combating increasing environmental deterioration, especially in the more upland areas of Wales/Marches, the ability to command your locale would have been important for a population increasingly under pressure. As outlined in Chapter Three, the Late Bronze Age was a time of adverse climatic change, with a myriad of studies showing that by 850 BC a change to colder, wetter conditions had taken place. Evidence for climatic deterioration comes from peat bog, palynological and flooding records in Britain, supported by wider palaeoclimatological studies (e.g. Gearey *et al.* 2020; Macklin *et al* 2005; Solomina *et al.* 2015). Studies have shown glaciers advanced throughout Europe beginning *c*. 1050 BC (Wanner *et al.* 2008) indicating that this climatic deterioration started several centuries before peaking *c*. 850 BC. It is therefore very possible that controlling their environment became more important for communities as the Late Bronze Age advanced.

The landscape in which these populations were living was not a new one to them; they would have seen echoes of the past all around them. Therefore, the decision to build or not to build on hills which already bore traces of ancestral activity would have been a symbolic one. The landscape of SW England was heavily populated by monuments denoting the presence of more ancient peoples (e.g. in Dorset, Poundbury has 3 Early Bronze Age round barrows within its walls and Chalbury has one, with a further 23 within 2 km of the site), and by placing these hilltop sites in close proximity to these older markers the builders seem to be embracing these links. Whilst it is certainly true that in SW England the density of ancient monuments is such that it would be quite hard to avoid them, there is also a significant number of ancient monuments in the Wales/Marches area, especially Early Bronze Age funerary monuments. A 2004 mapping exercise on a strip of land from Oswestry to Hay-on-Wye (a distance of roughly 100 km) counted 11 Neolithic monuments of a ritual or funerary nature (including long barrows, henges and a cursus) and 173 Bronze Age barrows (Stoertz 2004). Therefore, the fact that far fewer hilltop sites were built on hills containing them is noteworthy as only 23% of Wales/Marches sites had pre-existing monuments as opposed to 43% in SW England; it suggests a cultural choice regarding whether they wanted these hilltop sites to reference an ancestral claim to the land, or to state a claim to land unsullied by inherited entitlement. In a time of societal flux, the urge to cling to your ancestral past, to prove to the world that your dominion over the land in which you dwell can be demonstrated as going back to the ancients would have been a powerful one. Equally, it is possible that these Late Bronze Age builders in Wales/Marches were developing their authority in new lands, by building monumental enclosures on previously unoccupied hills dominating their surrounding landscapes. Within both regions there is a degree of regionality in this too; whilst Ceredigion has 29% sites with pre-existing monuments, in Powys/Shropshire 50% of sites do; in SW England 100% of sites in Dorset include earlier sites when there are none in Somerset. Again, it is the seaward facing sites that seem to be indicating potential cultural differences, with Pembrokeshire/Carmarthenshire having none and only 2 out of 5 sites in South Cornwall including a more ancient monument. Whatever the motivation, the data seems to suggest that different dynamics were at least partly responsible for decisions being made

about where to build these hilltop sites between the two case study areas examined, and even within the two areas.

The decision about where to build these monumental sites by Late Bronze Age communities would have been one influenced by any number of different motivations. We can only scrape the surface of the possible factors shaping the decision-making process here, however, even with the limited data available it is possible to show how the builders in each case study area were siting these monuments in response to regionally specific considerations. Whether the need to have a close fresh water source was paramount, or the need to enhance their claim to the land by stressing ancestral links, the building of these hilltop sites in both case study areas during the Late Bronze Age appears to follow particular cultural imperatives as to *where* they would be sited.

7.4 *WHEN* WERE LATE BRONZE AGE HILLTOP SITES BUILT?

The possibility that hillforts had their genesis in the Late Bronze Age was being discussed as far back as the first decade of the twentieth century when Maud Cunnington wrote that Knap Hill Camp (Wiltshire) was 'of great antiquity' (Cunnington 1911, 56), and may be traced back to the Bronze Age. By the 1970s, this possibility was being seriously entertained by many academics such as Savory, excavating at Dinorben, Denbighshire (1971), and Harding (1974). A number of excavations on hillforts in the 1980s demonstrated Late Bronze Age dates for their earliest development, most notably Balksbury Camp, Wiltshire (Wainwright and Davies 1995), Ram's Hill, Berkshire (Needham and Ambers 1994), Eildon Hill North, Scottish Borders (Owen 1992) and The Breiddin, Powys (Musson 1991). It is now generally accepted that many of these hilltop sites were established during the Late Bronze Age, some in locations that would go on to have hillforts constructed during the Iron Age.

The latter are sites with complicated chronologies as the recent *Habitats and Hillforts* project in Cheshire demonstrated with two of the six hillforts on the Cheshire Ridge illustrating this well. Eddisbury Hill had evidence of Neolithic activity, then the Late Bronze Age palisaded site discussed here which was superseded by two phases of a developed hillfort between 410 – 195 *cal* BC. There was evidence of an Early Medieval re-occupation as an Aethelflaedan burgh seeing the reconstruction of the outer ramparts and also post-Medieval occupation (Garner 2016; Mason and Pope 2016; Pope *et al.* 2020). Beeston Castle also had Neolithic evidence, followed by the Late Bronze Age site discussed here. It then had a Middle/Late Iron Age hillfort phase with massive ramparts and was in turn developed in the 13th century AD into a medieval castle (Ellis 1993).

What has certainly been true is that much of the work done in the past century on the chronology of hillforts has concentrated on southern central England, with less attention paid to sites further west. In many cases this is due to less excavation work having taken place in the west of Britain, with Wessex being subject to large-scale work including the *Danebury Environs Project* (Cunliffe 2003) and more recently *The Durotriges Project* (from 2009 under the aegis of Bournemouth University) unseen in the further reaches of the west of Britain, with the only example of a hillfort environs project in this area being at South Cadbury (Somerset) (Tabor 2008). Whilst there have been more investigations in the

west of Britain in the past decade such as Cheshire's *Habitats and Hillforts* and Denbighshire's *Heather and Hillforts* projects, The University of Liverpool's excavations at Penycloddiau Hillfort, Flintshire and Erin Lloyd Jones's (2017) thesis *Connections between the hillforts of the Clwydian Range and the wider landscape*, this thesis has attempted to help to redress the balance by examining sites in the Atlantic west of Britain to try and establish a possible chronology outside of the more well-understood central southern England.

Chapter Two briefly discussed some of the problems associated with a number of radiocarbon dates from some of the sites within the study area. Many were excavated decades ago before the rigor applied to modern sampling methods. Whilst in the past bulk sampling was considered acceptable, the aim for radiocarbon sampling today is to ascertain dating from single-entity, short-lived samples (Ashmore 1999; Bayliss 2009). Single-event samples can better establish the relationship between the 'dated event' for example the shedding of an antler, to the 'target event' – when that antler was used as a pick (Whittle *et al.* 2011, 38). Bulk samples run the very real risk of combining materials, some residual, that have different ages thus getting a date which may be anomalously old (*ibid.* 41). The challenge for the archaeologist is to interpret the dates obtained from samples in their context, and not to accept them on face-value as they merely date the organic material and not necessarily the deposit event itself (Fig. 7.1) (Bayliss 2009, 126). The hilltop sites explored in this thesis have examples of both secure and unsecure samples, sometimes within the same excavation. For example, The Breiddin has dates from rampart timbering and charcoal from sealed hearth deposits – both acceptable for Bayesian modelling (Musson 1991; Whittle *et al.* 2011, 40). However, it also has bulked samples from the body of the rampart, which would not be accepted for analysis today. Details of individual radiocarbon dates can be found in Appendix Two, however Table 7.2 and 7.3 below condenses these to illustrate the stratigraphic location and security of the dates for both hilltop and non-hilltop sites.

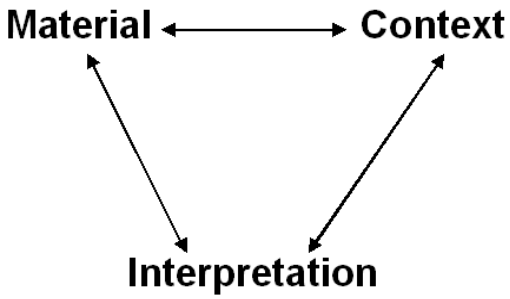


Figure 7.1 – The relationship between interpretation, archaeological context and the material recovered from it. (Bayliss 2009, 129)

Site	Stratigraphic location	Security of dates
The Breiddin	Rampart Occupation deposits	Some samples from rampart timbering provides a secure *terminus post quem* for the rampart construction. Other dates are from bulked samples, today considered insecure. Charcoal from sealed hearth deposits would be secure.
Beeston Castle	Charcoal from surface of LBA rampart Posthole fill	Charcoal from rampart surface single- event considered to be moderately secure for older samples. Materials from material deliberately deposited in postholes considered moderately secure.
Dinorben	Pre-rampart layer LBA rampart	Charcoal from hearth sealed under LBA rampart considered secure. Charcoal from collapsed beam provides *terminus post quem* date for event
Berry Hill	Building of bank Infilling of ditch	Clear turf layer beneath bank provides *terminus post quem* for the building of the bank. Dates not secure, as charcoal from these layers could be residual
Dale Fort	Late Bronze Age palisades	Charcoal from postholes of early phase of palisade building considered moderately secure.
Caer Cadwgan	Charcoal from construction of gateway Charcoal from destruction of gateway	Deposits from both are from sealed locations and considered secure.
Helsby	Colluvial deposits built up against bank of rampart	Not secure as could represent residual deposits from pre-rampart phase washed down against later ramparts.
Kelsbarrow	Charcoal from base of rampart	Not considered secure as there is no evidence that the charcoal was deposited at the time of the rampart building.
Eddisbury	Nutshell and grain from fill of palisade posthole	Moderately secure as the short-life grain and nutshell are putatively from the time the palisade was in use.
The Wrekin	Carbonised grain from hut floor	Reasonably secure as the charcoal is putatively from the time the hut was in use.
Porth y Rhaw	Hearth within late phase of defensive bank	Reasonably secure as hearths are generally a short-life event.
Great Castle Head	Charcoal from posthole	Reasonably secure as the charcoal is putatively from the time the posthole was in use.
Pendinas Lochtyn	Charcoal from posthole	Reasonably secure as the charcoal is putatively from the time the posthole was in use.
Moel y Gaer, Rhosesmor	Charcoal from occupation soil of sealed post in roundhouse	Reasonably secure as the charcoal is putatively from the time the roundhouse was in use.
Darren Camp	Charcoal from pre-mining surface	Samples from general occupation layers are problematic, as they could be residual, and do not date a specific event.
Bryn Maen Caerau	Occupation layer	Samples from general surfaces are problematic, as they could be residual, and do not date a specific event.
South Cadbury	Animal bone Antler found in ditch Charcoal	The dates are considered by Bayliss *et al.* 2000 to be secure, as they are consistent with each other, and supported by the LBA pottery found with the samples.
Killibury	Twig charcoal from pit beneath inner rampart	Twig charcoal more secure as it cannot represent 'old wood', and deliberate pit fills are considered secure.

Table 7.2 – Stratigraphic location and security of dates of samples taken for radiocarbon dating in hilltop sites.

Site	Stratigraphic location	Security of dates
Brean Down	6 LBA samples; from charcoal and animal bone.	The security of the dates from these samples are mixed. Some of the bone samples are from secure locations, as are some of the charcoal, e.g. hearths. Some charcoal came from sieved samples from distinct charcoal layers, and are therefore unsecure.
Caldicot Castle Lake	Horizontal roundwood rods	The wood from these samples are secure as the date the building event of a stake-built structure.
Cabot Park sites	Organic layers	Samples from general occupation layers are problematic, as they could be residual, and do not date a specific event.
Scarcewater	Residue on pottery	The dates from food residue on pottery is secure.
Gwithian	Residue on pottery	The dates from food residue on pottery is secure.
Tremough	Residue on pottery	The dates from food residue on pottery is secure.
Stackpole Warren	Wood charcoal	Charcoal from general occupation layer not secure as it cannot date a specific event.
Chapeltrump	Sharpened stakes and planks	The wood from these samples are secure as the date the building event of a stake-built structure.
Rumney Great Wharf	Wood and charcoal	Wood and charcoal samples from general occupation layer not considered secure
Shorncote Quarry	Wood fragment	Wood from general fill of a well, not considered secure today.
Hog Cliff Hill	Charcoal from posthole fill	Materials from material deliberately deposited in postholes considered moderately secure.
Combe Hay	Charcoal	Charcoal from general occupation horizon, not considered secure today.
Tinney's Lane	Numerous dates from pit and posthole fill	Dates considered secure.
Huntsman's Quarry	Numerous dates, mainly from residue on pottery	Dates considered secure.

Table 7.3 - Stratigraphic location and security of dates of samples taken for radiocarbon dating in non-hilltop sites.

The brief overview of all available radiocarbon dates in Chapter Two for both hilltop and non-hilltop sites did contain samples which would not be accepted as secure today, as detailed above. Using only the more secure dates, a possible chronology for hilltop sites in the Atlantic west of Britain can be created. To enable a greater understanding of how the chronology of both hilltop and non-hilltop sites interact during this period, the date spans from secure radiocarbon dates were plotted in 50-year increments to show when each site could potentially have been active (Fig. 7.2). For example, The Breiddin (Powys) has several secure radiocarbon dates between 1011 *cal.* BC and 815 *cal.* BC (Musson 1991) and therefore would be included on the chart in five of the date increments. Whilst this does not mean that every site was occupied for the entire period of the date span included here, and at best provides a *terminus ante/post quem* for their construction and abandonment, it is indicative of the number of sites that *could* have possibly been occupied within each 50-year timespan. This is certainly an area which would benefit greatly from more excavation, and more detailed examination of the radiocarbon dates using Bayesian analysis. The numbers of sites analysed in this thesis is quite small, which has to be borne in mind when looking at the conclusions. A larger data set would need to be interrogated to be more certain about the potential chronology presented here. What is presented here is certainly not

definitive, but does however, raise some interesting questions about the chronology of these western hilltop sites.

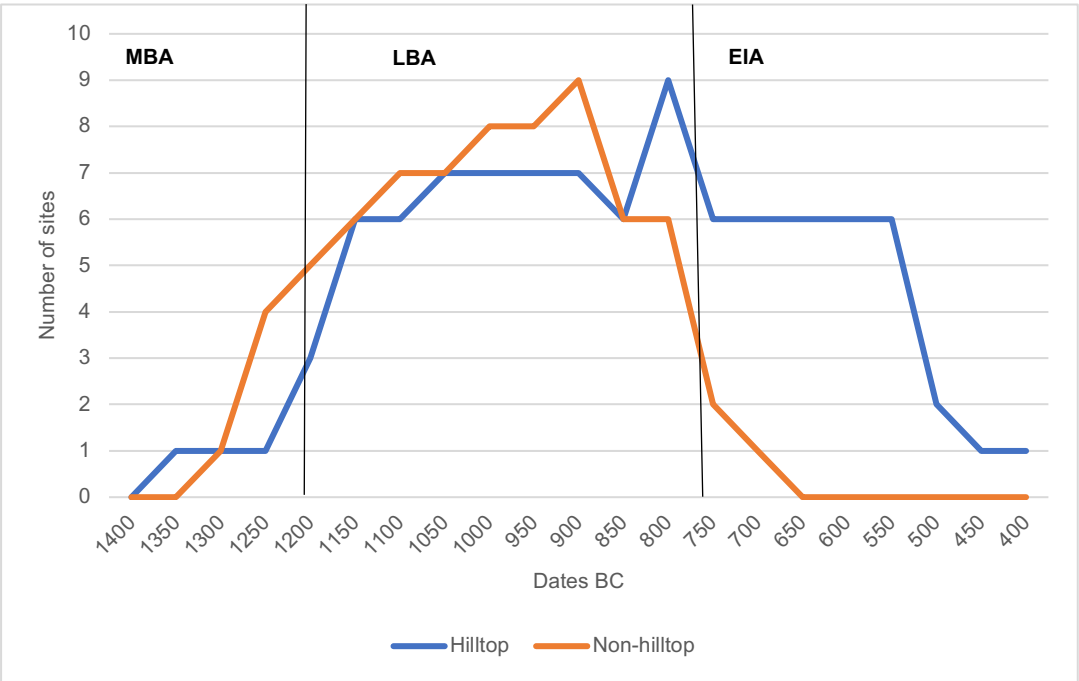


Figure 7.2 – Numbers of sites against possible date spans for both hilltop and non-hilltop sites.

It is important to acknowledge that the sites chosen for this thesis are ones that have Late Bronze Age dates and therefore do not represent what was happening in either the earlier or later periods. When looking at the dates presented here chronologically it appears that for both hilltop and non-hilltop sites there is an increase in the number of sites with possible occupation between 1250-1100 BC (which supports McOmish's (2018) dates detailed in Fig. 0.4). Hilltop sites plateau between 1000-900 BC, with a sharp reduction being seen in the early ninth century BC whilst non-hilltop sites continue to increase until 900 BC. The small increase in numbers of hilltop sites after 850 BC represents those sites which start in the Late Bronze Age and run into the Early Iron Age. The sites that could appear to possibly be Early Iron Age are detailed at Table 7.4, however, it is too simplistic to look solely at these dates and attribute an EIA date to them without looking further at the evidence. All of these sites have some Late Bronze Age evidence as well, and all the excavators believed that the sites concerned at least commenced construction in this earlier period. It is probable that these sites continued into the Early Iron Age, with some like Porth y Rhaw (Pembrokeshire) and Moel y Gaer, Rhosesmor (Flintshire) seeing the bulk of the activity on the site taking place during this later period (Barker and Driver 2011, 67; Guilbert 1975b, 115). The non-hilltop site at Hog Cliff Hill (Dorset) however, despite having an EIA radiocarbon date was believed by the excavator to have been almost entirely a Late Bronze Age enclosed settlement (Ellison and Rahtz 1987). There seems to have been a degree of continuity at these sites, with occupation spanning the LBA/EIA transition period, and we look forward to the 20 radiocarbon dates from Penycloddiau (Denbighshire) to shed further light on this transitional period.

Hilltop sites	Dating method	LBA dating evidence
Moel y Gaer, Rhosesmor	881–550 *cal* BC (radiocarbon dates)	Small bronze stud, similar to continental LBA examples found in Rampart B (Guilbert 1975b, 115)
Berry Hill (construction of bank phase)	810–598 *cal* BC (radiocarbon dates)	Radiocarbon dates for *Terminus post quem* date for construction of defences, but LBA date (2810 ± 40 cal BC) for charcoal layer in Ditch 4 (Murphy and Mytum 2012, 298)
Porth y Rhaw	762–512 BC *cal* (radiocarbon dates)	Degraded LBA socketed axe found in later layers, and construction of site now placed firmly at end of LBA by academics (Barker and Driver 2011, 67; Crane and Murphy 2010, 98)
Non-hilltop site	**Dating method**	**LBA dating evidence**
Hog Cliff Hill	771–538 *cal* BC (radiocarbon dates)	Excavator believed radiocarbon date could have been a later EIA posthole. Site contained 29 LBA pottery sherds, and that the Phase 2 construction of the enclosure and at least 3 circular ring-groove houses took place in the ninth-century BC (Ellison and Rahtz 1987, 229)

Table 7.4 – Hilltop and non-hilltop sites with secure dates from the Late Bronze Age / Early Iron Age transition.

However, whilst Fig. 7.2 is instructive, it is important to note that this graph contains all the of secure dates for these sites. What is necessary here is to pull out any differences in the events these dates represent. Some are from pre-rampart phases sealed in by later events, some are dates associated with the enclosure and others represent purely occupation events. Fig. 7.3 below shows the dates where it has been possible to tease out these differences. The dates come from 14 hilltop sites, of which 12 are in Wales/Marches, a bias somewhat exacerbated by the lack of radiocarbon dates from the SW England group. Whilst this only shows radiocarbon dates for securely dated events, there are probable pre-rampart phases at other sites where the dating samples are less secure (for example at Helsby (1193-1091 *cal* BC) and Kelsbarrow (992-904 *cal* BC) in Cheshire). Some sites, such as Dinorben, have a definite pre-rampart phase (1207-998 *cal* BC) preceding the Late Bronze Age ramparts (1188-901 *cal* BC). As already stressed, these dates are purely indicative, and do not claim to represent the actual times when these hilltops were being used, only when they *could* have been in use. However, both Fig. 7.2 and 7.3 suggest that there is a possibility that hilltop sites were in use in the Atlantic west slightly earlier than the accepted dates for Wessex of 10th – 8th centuries BC (K. Waddington pers. comm 2021).

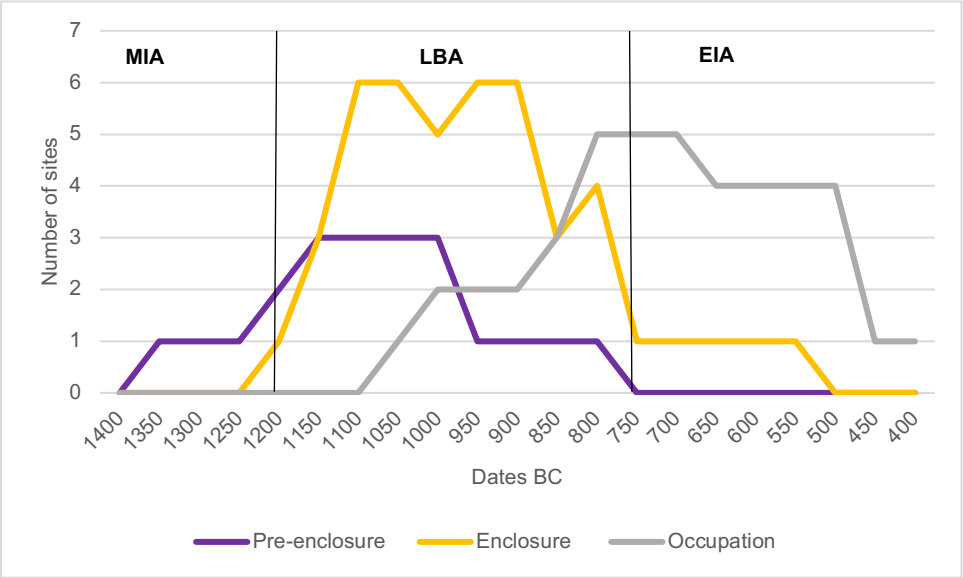


Figure 7.3 – Numbers of sites against possible date spans for pre-rampart, enclosure and occupation events at hilltop sites in both case study areas.

Non-hilltop, lowland settlements had been the most common site type in the proceeding Middle Bronze Age, with individual households set in formalised field systems (Brück 2007; Lawson 2000; Pope 2015), and this pattern certainly continued into the Late Bronze Age, with Fig. 7.2 showing a greater number of securely dated non-hilltop sites in the study area. However, as Fig. 7.2 also suggests, at about 1250-1100 BC there was a remarkedly steep rise in the possible number of hilltop sites being developed. Whilst some hilltops had been settled and even enclosed with Causewayed Enclosures since at least the Early Neolithic period – as examples of settled hilltops at Beeston Castle, Cheshire (Ellis 1993) and Bryn Maen Caerau, Ceredigion (Williams 2001), and a Causewayed Enclosure at Hambledon Hill, Dorset (Mercer and Healy 2008) show – the more widespread enclosure and accompanying sporadic occupation of these hilltop sites was a new development. There is a suggestion, illustrated in Fig. 7.3, that on some sites this enclosure was proceeded by a pre-enclosure phase, and it is also possible that some of these hilltop sites were never in fact enclosed. As touched on in Chapter 5, the evidence for Late Bronze Age pre-enclosure phases may have been compromised by where this type of data would be found on a hilltop. Subsequent development, modern farming techniques and older excavation strategies may all have led to potential biasing factors limiting current evidence. More excavation, and importantly more radiocarbon dates, are needed to be able to work out these complicated chronologies.

The Late Bronze Age was a time of adverse climatic change. Increasingly, evidence suggests that the start of this climatic downturn could be linked to the origins of development of hilltop sites in the mid-13th century BC. There are tantalising glimpses of processes of change taking place during the first half of the Late Bronze Age. Tipping *et al*. (2008) showed a cessation in barley production in the uplands of NE Scotland by the tenth century BC; also in Scotland, Pope (2015) demonstrated a reduction in the average floor area of dated roundhouses from 78 sq. m in the early Bronze Age (2000–1400 BC) to 40 sq. m by the Late Bronze Age (1000–800 BC). The time in which this reduction took place (between 1400-1000 BC) is the time at which the number of hilltop sites beginning to be developed started to

increase (1250–1100 BC). There are also other architectural signatures of environmental impact at this time (R. Pope pers. comm. 2020).

Other changes in society can also be observed during the first half of the Late Bronze Age. Changes in depositional practices can be seen from *c.* 1500 BC, with less metalwork and pottery being deposited in funerary contexts (Pollard 2002, 29) and more in liminal contexts. This deposition into rivers, bogs and high places hugely accelerated after 1300 BC, peaking between 900–800 BC (Needham 2007). Both Fontjin (2019) and Ingold (2000) postulated that depositing valuable items into the landscape was not an act of destruction, but a way of creating another form of value in terms of an abstract concept or socio-cultural quality that established a relational connection between the depositional landscape and the people within it. The construction of hilltop enclosures, situated in locations designed to be seen from a distance and possibly created using gang-working with different groups of people, could also be a method of forming another relational connection with the landscape at a time when the effects of the beginnings of a climatic downturn may have started to be felt.

The peak of these depositional practices between 900–800 BC coincides with a drop in the possible numbers of hilltop enclosures and non-hilltop settlements seen in Fig. 7.2. Whilst this is not a complete cessation, it does show a drop-off in activity at a time when society would have been in a state of flux. 800 BC marked the transitional point in many ways: there was a massive reduction in the amount of metalwork deposited after 800 BC with the transition to the Llyn Fawr metalworking complex (Needham 2007, 53) coinciding with the transition from Post Deveral-Rimbury Plainware ceramics to Post Deveral-Rimbury Decorated Ware (Lambrick 2014). However, whilst there was a drop at the start of the ninth century BC, the building of hilltop enclosures did not stop, and as has been shown here continued into the Early Iron Age at a number of sites demonstrating at least a degree of continuity. Going forward, it is important that the development of sub-field chronologies is done in tandem with each other, which will assist in a more complete understanding throughout each sub-field.

What has become more apparent with increased levels of excavation in the last two decades, is that more evidence of Late Bronze Age development of hilltops prior to Iron Age hillforts being built is coming to light. Taking Cheshire as an example, the recent *Habitats and Hillforts* Landscape Partnership Scheme (2008-2012) combined with the older excavation of Beeston Castle has demonstrated that even within this limited geographical region, a significant number of sites (four out of six) have some evidence of Late Bronze Age activity prior to Iron Age hillfort development. Whilst only half of these four sites have definitive evidence for enclosure (Beeston Castle and Eddisbury), the fact that the majority of sites in this small cluster have Late Bronze Age evidence is noteworthy in itself. It tantalisingly hints at what could be present at other sites, if only the work was carried out to uncover it.

The chronology of hilltop enclosures, starting from 1250 BC, peaking between 1000-900 BC and dropping off thereafter, the *when* were Late Bronze Age hilltop sites built, is neither complete nor conclusive and would benefit hugely from increased levels of excavation in both SW England and Wales/Marches, enabling the creation of much finer-grained Bayesian analysis of dates to create regional chronologies. However, what has been shown with the limited data available to this study, is

that the creation of the first hilltop enclosures may broadly coincided with many other changes both within society and the environment. These were new types of monuments that must have taken a huge amount of work from the communities that created them, investing time and effort from communities that may already have been feeling the first effects in a downturn in environmental conditions. *Why* these communities felt impelled to create these enclosures is therefore the most important part of this study into the origins of Late Bronze Age hilltop sites.

7.5 *WHY* WERE LATE BRONZE AGE HILLTOP SITES CREATED?

The stated aim of this thesis has been to try and increase our understanding of the reasons behind *why*, at the end of the Bronze Age, hilltop enclosures began to be built; a process that would continue into the Iron Age and result in some of the most impressive prehistoric monuments in the country. Whilst the available evidence in the study area of the Atlantic west of Britain has not been as comprehensive as in areas further south and east, it does at least enable some conclusions to be drawn about what was happening in society during this time that may explain the reasons behind their construction. This section will examine the possible reasons *why* these hilltop enclosures were created, what reasons the communities that invested so much effort in their creation were using them.

7.5.1 Meeting places - animals, feasting, metalworking

The idea that hilltop enclosures have acted as seasonal meeting places has been discussed by numerous academics. Hill (1995, 55) saw them as 'not farmsteads', believing instead that they were places where a diverse range of activities took place that did not happen in domestic locations. Hamilton and Manley (2001) thought that Late Bronze Age hilltop enclosures acted as landscape co-ordinators whilst Brűck (2007, 30) believed that they were foci for their communities and were 'monumental expression of attachment to place'. What has become apparent during this investigation is that elements of all these theories have validity when looking at the Late Bronze Age hilltop enclosures of the Atlantic west of Britain. These sites were important places within the landscape; they were unlike the farmsteads and lowland settlements where people lived their normal lives, instead being places where the community came together with their animals, not to inhabit but to gather together to share food, perhaps exchange goods and celebrate key moments in their shared existence.

Hilltop enclosures were important locations for these people, as the effort expended to create them constituted a significant burden on the population and would only have been done if the end result was worth the effort. Beginning between around1250 BC, the construction of these new forms of settlement architecture accelerated until it plateaued about 200 years later dipping from *c.* 900 BC onwards. This broadly coincides with Brown's (2008) outline of climatic patterns during this period: a wetter phase beginning around 1500 BC which lasted until 1200 BC with a more stable period until *c.* 850 BC when climatic deterioration really began to take hold. We see tantalising glimpses of changes in upland agricultural patterns and house architecture during this period, suggestive of the first effects being felt of the climatic deterioration that would have transformed the warmer, dryer climate of the Middle Bronze Age to the colder, wetter conditions that prevailed at the end of the Late Bronze Age (Pope 2015).

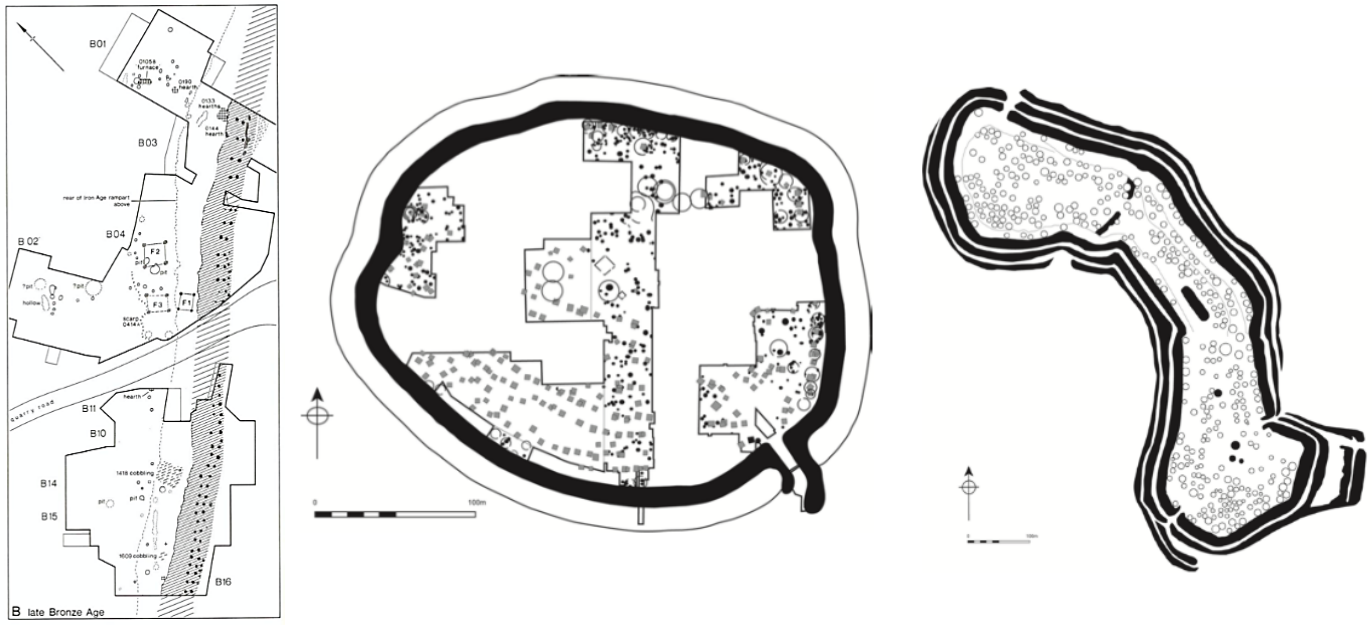
Whilst it is not yet possible to establish a direct link between the two events, the timing is certainly suggestive. The agricultural practices in the uplands changed during this period from arable to pastoral (Tipping *et al*. 2008, 2384), however it looks like these uplands remained important to the communities that inhabited them even if they were no longer being actively cultivated. Their usage was evolving, re-organising to take account of the changing conditions, but the land itself remained important. The enclosing of the hilltops in these upland areas at the same time may be linked to this process and could be seen as both a practical move and a socio-cultural one. Practical in the sense that pastoralism was becoming more important in these areas once it became unviable to plant crops there and having a safe place to corral livestock when taken to summer grazing areas helps to ensure their success. Prehistoric as well as historic evidence throughout the British Isles and Ireland has shown the importance of locations where transhumance activities can take place, for example Scottish shielings, Irish booleying and the Welsh hafod and hendre system (S. Stallibrass pers.coms. 2021). These sites were often high up, but not necessarily on hilltops, and were located where there was plenty of grazing, shelter and water.

The hilltop sites analysed in this thesis could have provided a location to base animals during the summer months. All of the sites are within 1km of a water source, and could easily sustain flocks or herds which were taken out daily for grazing and returned nightly to the more secure confines of a hilltop enclosure at night. The fact that SW England has less of a focus on open water (whilst still undoubtably important), may hint at sheep being the principle livestock. Whilst cattle are obligate drinkers, and require open water, sheep are not and can survive on dew, rain and vegetation. This subtle difference in preferences between the two case study areas may hint at slight variances in the type of livestock being farmed.

Hilltop enclosures could also be the place where the tasks necessary for successful animal husbandry were taking place; castration, culling and redistribution (Cunliffe 2013, 301). At the same time the building of these monumental structures in upland areas, either in important ancestral lands or new areas being claimed depending on the region they were built in, suggests a need to cement larger communal groups together that had not been as necessary during the Middle Bronze Age when upland areas were being more actively farmed, as illustrated by Middle Bronze Age field systems still seen in upland areas like Dartmoor. Whilst most of the everyday activities of life were taking place in the lowland settlements, the construction of hilltop enclosures and the activities taking place there show that they were not becoming marginalised or increasingly peripheral places to communities, but locations still at the centre of their cultural life.

What was taking place in these upland enclosures? The evidence examined in this thesis (landscape, settlement and material culture) supports the hypothesis that they acted as meeting places for their communities, probably linked to the pastoral calendar. The paucity of structural evidence suggests that they were not built to have a large permanent population, unlike the later hillforts of the Iron Age built from the sixth century BC onwards, such as Danebury (Hampshire) and Hambledon Hill (Dorset) which have evidence for dense settlement activity – grain storage pits, 4-post granaries and roundhouses (Fig 7.3). Estimates of population for some developed hillforts from the Middle Iron Age onwards exist such

as 335 people at Danebury (a relatively small hillfort) to 1258 at Hambledon Hill (a much larger one) (Sharples 2014). Whilst no estimates of the population density of Late Bronze Age hilltop sites exists, Fig. 7.4 also shows the Late Bronze Age structural evidence at The Breiddin (Powys), one of the most developed of these Late Bronze Age hilltop enclosures. Apart from the timber-lacing evident in the ramparts, there are only three possible 4-post structures within the excavated area, very different from the later Middle Iron Age hillforts. This hilltop site has a large amount of Late Bronze Age evidence, showing a great deal of activity during this time. Therefore, it is a safe conclusion to reach that they did not serve the same purpose as their later incarnations - these Late Bronze Age hilltop sites were constructed with a different design concept. They were not intended to house people throughout the year, their occupation appears to be less permanent and more transitory and had a functional pastoral agriculture-based design. The Iron Age developed hillforts of Wessex seem to have more of an arable focus as opposed to the pastoral one in the Late Bronze Age. Harding (2012, 206) details how sites such as Danebury have substantially greater grain storage capacity, both in absolute and proportional terms, than the non-hillfort settlements surrounding them, certainly in excess of the requirements of the resident community. This would suggest that the later hillforts were more concerned with arable agriculture and production, whereas it was pastoral agriculture that was the main focus for the Late Bronze Age hilltop sites. This pastoral focus for Late Bronze Age hilltop sites can also be seen by the fact that the availability of water seems to have been important, especially in the Wales/Marches case study area. As already outlined, people and cattle need a large amount of water daily, for drinking, cooking and washing. The fact that a high percentage of sites in both study areas had water sources within 1 km (85% Wales/Marches and 86% SW England), with 46% of sites in Wales/Marches having water adjacent and 8% having an on-site water sources (SW England 14% and 0%) is indicative of the high priority the builders put on close, reliable and substantial water sources – not the leather bags attached to roofs to catch rainwater suggested by Oswald *et al*. (2006). Therefore, it seems safe to assume that for at least part of the year the need to supply a large amount of water to the site was so important that it influenced the siting of these monuments.



A – The Breiddin B – Danebury C – Hambledon Hill

Figure 7.4 – Structural evidence from The Breiddin, Danebury and Hambledon Hill hillforts.
(Musson 1991, 20; Sharples 2014, 228 - 229)

So, we know that activities were taking place on these sites that necessitated large amounts of water at certain times. What else does the evidence examined here suggest was occurring at these hilltop enclosures? The ceramic functionality analysis, whilst limited in its scope due to the paucity of ceramic assemblages at a number of sites especially in the more aceramic regions of Wales/Marches, indicates that different patterns of usage can be seen in the hilltop and non-hilltop sites. The non-hilltop sites demonstrate an even spread of functions indicative of everyday domestic living, however the hilltop sites have a different pattern of functionality with food preparation and cooking being central. Where more extensive ceramic assemblages exist on hilltop sites in the southern parts of the case study areas, serving dishes are also very well represented (e.g. Ham Hill, Somerset). It is certainly a strong possibility that in the aceramic regions such serving dishes would have been made of organic materials such as wood which have not survived (similar to a Middle Iron Age wooden bowl that was recovered from the cistern at The Breiddin (Musson 1991, 166). This differentiated functionality strengthens the proposition that hilltop enclosures hosted gatherings where sharing food and making contacts was central. The discovery of midden deposits, similar to those found at midden sites but on a much smaller scale, at some of the more developed sites such as The Breiddin and South Cadbury and bronze feasting equipment also at South Cadbury would further support this. The interconnectivity suggested by similarities in ceramic assemblages outlined in Chapter Six may have been the result of kinship or community links, leading to the adoption of similar pottery styles by those attending these events. If these hilltop enclosures drew in a large number of people from the surrounding area to come together to share food, then the fact their pottery styles slowly homogenised into similar designs could reflect this. The same can be seen with pottery links to the midden site at Brean Down which had similar pottery styles to seven nearby Late Bronze Age sites.

The range and types of material culture found on the hilltops, especially personal items and weaponry, evokes the impression that appearance and physical grooming was important. The personal items found on these hilltop sites were overwhelmingly made of metal rather than natural materials such as bone or stone as found on non-hilltop sites. Considering the transitory nature of the occupation evidence this suggests that how a person looked whilst there was important. Toilet articles (tweezer and razors) and weapons are almost exclusively found on hilltop sites and not the lowland settlement sites where the bulk of the population lived, which might also be linked to depositional practices. Attention was being paid to how a person looked, from the grooming of facial hair to the wearing of their high-status items, which would suggest that the gathering occurring at these sites went beyond that of a mustering of stock, however raucous that might have been. The fact that the vast majority of weapons were found on hilltops indicates that the projection of martial power, wealth and status played an important role, as Sørensen (2013, 224) said 'the cultural appearance of a person is a complex signifier'.

The Late Bronze Age was a complex period when significant restructuration and reconsideration of social, political and economic systems was taking place (Woodhead 2012). The evidence seems to suggest that these Late Bronze Age hilltop enclosures, like midden sites, were being utilised for community level events unseen in the Middle Bronze Age. Bringing people together from across the landscape, gathering at monumental sites built to be seen within these landscapes during this transitional time makes utmost sense when the fact that gatherings, and in particular feasting, can play a pivotal role in socio-political development and change (*ibid*.). Feasts can be places where important social activities take place such as gossip, oath-making, the settling of disputes and arranging marriages in a convivial atmosphere (Dietler 2005, 165). Formal events like rites of passage, marriages and initiations (*ibid*.) can take place within a space where the sharing of food and drink smooths potential tensions. Food has always had a value far beyond just satisfying a physiological need – for many societies the sharing of food has a much more symbolic significance. There is no suggestion within the evidence presented here that feasting on the scale of what was taking place at midden sites was occurring at these hilltop enclosures, however it does seem to suggest that the sharing of food on some level was important on these sites.

Other factors examined here also seem to suggest that these hilltop enclosures were places that had an importance beyond that of just a large cattle kraal. Whilst non-hilltop settlements have been shown to be the main craftworking hubs during this period, one specific industry has stood out as being important on several hilltop sites. Metalworking dominated the craftworking evidence on hilltop sites and although not common, when it was uncovered (e.g. The Breiddin; Beeston Castle) it could be substantial. Ethnographic evidence has shown that in pre-industrial societies metalworking was not a purely practical activity, but one where ritual and specialist knowledge led to it being an industry that could never be described as merely utilitarian (Helms 2009, 155; Webley *et al.* 2020; Yates and Bradley 2010b, 42). These hilltop enclosures, even though not permanently occupied, appear to have been an appropriate place for metalworking to have been taking place and it is quite possible that metalworking activities could have been taking place during these seasonal gatherings. What is more, hilltop enclosures not only played host to the start of the life of a bronze object, but were considered to be

appropriate places for their deposition at the end of their practical lives. The vast majority of axes found in these case study areas were deliberately deposited on hilltop sites, with 88% of all metal tools being found on the hilltop sites. Not only tools were deposited, it appears the bronze razors, only found on hilltop sites, were also placed in what seems like deliberate depositional locations.

At first glance, these Late Bronze Age hilltop enclosures would appear to be the poor relation to the developed hillforts of the Middle Iron Age with their large populations and dense settlement activity. This is a false equivalence; Late Bronze Age hilltop enclosures are not underdeveloped hillforts, but a very different structure which played a specific role within their communities distinct from that which followed. Wessex Early Iron Age hillforts were in fact smaller on average than the hilltop enclosures that preceded them (Cunliffe 2005, 383). They developed at a time when the first effects of climatic deterioration were beginning to be felt, when agricultural patterns were being re-organised and society was in a state of flux. Built in locations that could be seen throughout their surrounding landscape, quite possibly by different groups from within their communities, these hilltop enclosures provided a place for people to come together to try and navigate the socio-political changes that were probably being felt during this transitional time. They created a relational connection between the people that constructed them and the landscape in which they sat, that would have been both politically expedient, by declaring their tenure of the land, but also providing a reassuring continuity, a connection to the land which their people had worked for generations. Whilst they very much had a practical purpose, these Late Bronze Age hilltop enclosures were a statement of permanence in a time of change.

7.5.2 Established hilltop sites

Throughout this thesis, sites have been described as hilltop enclosures rather than hillforts, as the word hillfort evokes the monuments seen in Fig. 7.4 – developed Middle Iron Age enclosures with large populations and much structural evidence. The Late Bronze Age sites examined here were not like this - they were very different structures. However, what has also become obvious is that four sites in particular do seem to have a different character than the rest. Beeston Castle (Cheshire), Dinorben (Flintshire), The Breiddin (Powys) and South Cadbury (Somerset) (Fig 7.5) have all stood out when looking at both settlement evidence and material culture, as having a developed assemblage more akin to later hillforts. These four sites were the only ones in the ‘excellent’ category for data quality, so the possibility is there that they only look different due to the amount and quality of evidence recovered. However, a number of other sites including Norton Fitzwarren and Ham Hill (both in Somerset) have also been extensively excavated, and although they do have a reasonable amount of evidence, they do not present the same as these four sites. This group of sites are the only ones with all five types of settlement evidence present – enclosure, structure, occupation, craftworking and agriculture, but also have the highest levels of evidence recorded, for example the metalworking at The Breiddin and agriculture at Beeston Castle. They dominate the material culture evidence, particularly in Wales/Marches, with other sites having much reduced levels of evidence as seen in the other Late Bronze Age hilltop enclosures on the Cheshire Ridge (Garner 2016). The situation is not quite as clear cut in SW England, as both Norton Fitzwarren and Ham Hill have reasonably sized assemblages, but even here South Cadbury stands out. Tentative links can be seen between some of these sites via the

ceramics in Wales/Marches, and in SW England these links can also be seen between hilltop sites and non-hilltop ones. The dates of these four sites are broadly similar (Fig. 7.6), falling between the 12th and 10th/9th centuries BC.

Figure 7.5 – Locations of established hilltop sites. (Map data 2021 © Google).

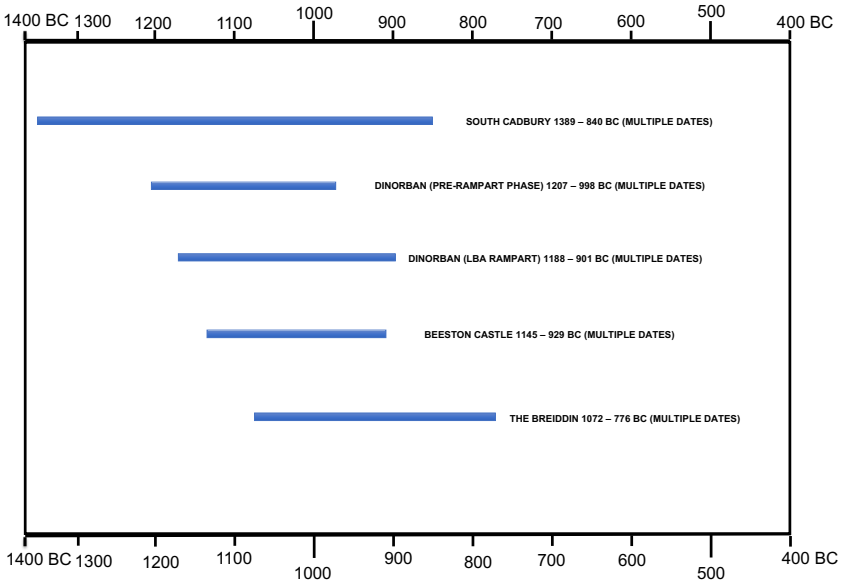


Figure 7.6 – Radiocarbon dates for South Cadbury, Dinorben, Beeston Castle and The Breiddin

What then could be happening here? Whilst there is no suggestion that these four sites were the same as classic hillforts – the lack of settlement evidence on these sites makes it clear that they did not have a large permanent population – there is definitely more going on at these sites than others from the same time period and could be considered as *established* hilltop sites. However, these are not a homogeneous group – the three sites in Wales/Marches need to be considered as separate from South Cadbury in SW England. Taking South Cadbury first, the evidence coming from the Somerset cluster group as a whole is different from the rest of SW England. Hilltop enclosures in Dorset and Cornwall have sparse material culture and settlement evidence whilst South Cadbury, Norton Fitzwarren and Ham Hill in Somerset taken together show a much higher level of activity. Cunliffe (2003) considers that (in the Iron Age) this group needs to be seen as more like those sites further east than as those of the Atlantic west. The evidence examined here seems to support this view. The South Cadbury assemblage is similar to that seen at sites in the Thames Valley such as Rams Hill (Berkshire) which Needham and Ambers (1994) believed were focal points for seasonal meetings for the pastoralist and transhumant communities of the surrounding areas. They acted as places where inter- and intra- regional economic and social exchange took place – similar conclusions to those made in this thesis. The dates are again broadly similar to those in Fig. 7.4, with the first phase of enclosure taking place in the 12th century BC, but the weight of activity being between 1070–890 *cal*. BC (Needham and Ambers 1994, 235). Ram's Hill is similar in other ways too, it has the low-key occupation and paucity of settlement evidence seen in all these Late Bronze Age hilltop sites. It is therefore not unreasonable to place the Late Bronze Age hilltop sites in Somerset examined here in a broad cultural grouping with those of the Upper Thames Valley and areas further east rather than with those of the Atlantic west.

The Wales/Marches group of Beeston Castle, Dinorben and The Breiddin are more difficult to explain. They are geographically distant from southern central England, so unlike South Cadbury it is doubtful they belong to any cultural grouping in that area. Dinorben and Beeston Castle have dates spanning the 12th–10th centuries BC, whilst The Breiddin is slightly later with 11th–8th centuries BC dates, but still in the same general timeframe. Fig. 7.7 details both the ceramic networks associated with this area plus Dinorben which is not part of this network, and what can be seen here is that the distances between these sites are not large. Ethnographic studies have shown that a distance of 20-30 km, a round trip of 10-15 km, can be achieved in a day's walk (Murrieta-Flores 2009; Pope *et al*. forthcoming) with even greater distances able to be covered on horseback; *c*. 24 km in two hours, 50-60 km in a day long, one-way ride (*ibid*.). The greatest distance between these sites is 70km (between Dinorben and The Breiddin), just over a day's ride and no more than two and a half day's walk. What we might be seeing here are the first, tentative glimpses of links between sites across the landscape during the Late Bronze Age.

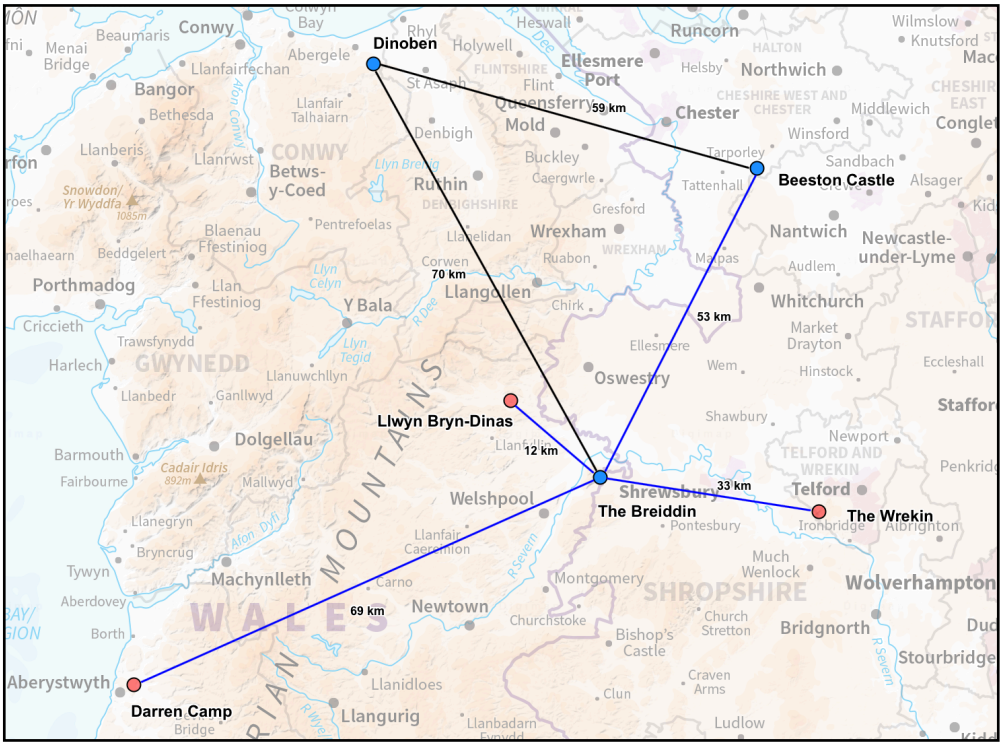


Figure 7.7 – Wales/Marches established hilltop sites and ceramic networks.
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If these sites were part of a general network, what role could these established hilltop sites have played? There is no question that the scale of the assemblages excavated from Dinorben, Beeston Castle and The Breiddin is greater than other sites in the same general area. Unlike the areas further south, very little evidence of non-hilltop settlements has been found in the Wales/Marches area (Halstead 2011, 66) other than examples of cropmark enclosure sites such as a series of field boundaries and enclosures on Denbigh Moor in NE Wales, remnants of the Late Bronze Age agricultural landscape (Halstead 2011; Manley 1990). Even with people travelling some distance for their seasonal, transhumance activities, it is highly improbable that these hilltop sites occurred in isolation – they must have been part of a broader pattern of settlement that is archaeologically invisible to us at this time (Halstead 2011). It is tempting to see the three established hilltop sites as having both a greater role and a potentially different function within their communities than the less established hilltop sites in the area due to the levels of activity recorded there. They were possibly drawing in people from a far wider area and had a more significant role than the less established sites, similar to lowland midden sites in so far as they were both gathering places for wider communities. However, it will only be when more excavation is done in this Wales/Marches region to try and locate both lowland settlements and excavate hilltop sites further, that these relationships will become clearer. The only thing that can be said with some certainty is that these three established hilltop sites appear to have been locations where a higher level of activity was seen, and that they were probably places that played a more important role in the life of the communities that built them.

7.5.3 Maritime connections

It has become apparent during the course of this research that a specific group of sites are distinctly different from the rest. Hilltop and promontory sites in both SW Wales and Cornwall seem to suggest that maritime links were more important than land-based ones. Chapter One outlined recent work in Ireland that has shown a number of hillfort sites date to the Late Bronze Age – do these maritime links exist beyond the Bristol Channel and across the Irish Sea to Ireland? To enable a meaningful comparison, it is first necessary to examine the chronology of Irish hilltop sites (called hillforts in Ireland), to see if there is a similar chronology of occupation to those in the Atlantic west of Britain. Twelve Irish sites were examined including those of the Class 2 hillforts taken from the *Hillforts, Warfare and Society in Bronze Age Ireland* Project (O'Brien and O'Driscoll 2017) detailed in Table 1.1, as well as five more notable and well-documented Irish LBA sites; Rathgall, Co Wicklow (Raftery 1972; O'Brien 2016), Haughy's Fort, Co Armagh (Mallory 1995; Mallory *et al*. 1996; O'Brien 2016), Dún Aonghase, Aran Islands (Cotter 2012; O'Brien 2016), Mooghaun, Co Clare (O'Brien 2016) and Knock Dhu, Co Antrim (McNeary 2014; O'Brien 2016). These dates were examined in the same way as the British Late Bronze Age hilltop sites detailed at Fig. 7.2 with the results at Fig. 7.8. As has already been stated, this is a small data set, and does not necessarily mean that these sites were all occupied, all of the time for their date-spans. It is purely indicative of what *could* have been happening at these sites during this time period.

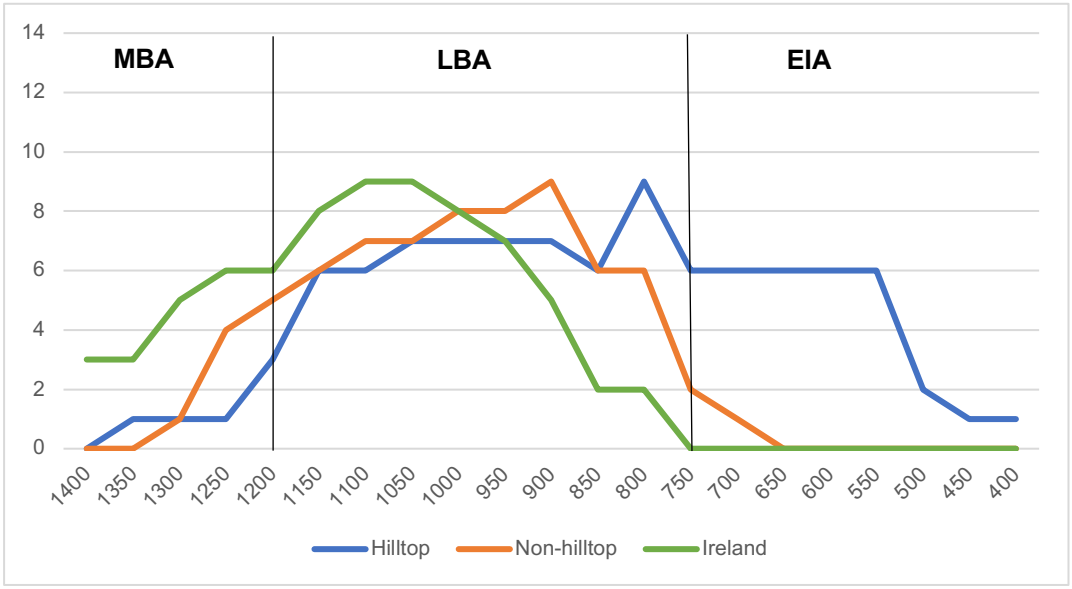

Figure 7.8 – Numbers of sites against possible date spans of hilltop and non-hilltop sites in the Atlantic west of Britain and Irish Late Bronze Age hillforts.

Many of these sites have long life spans, with occupation from the Neolithic to the Early Modern Period, however these should be seen as distinct phases of occupation that bare little relation to each other; as O'Brien and O'Driscoll (2017, 322) said 'These locations acquired different meanings and associations over time.' Whilst still acknowledging that this graph represents only a *possible* chronological profile for

numbers of sites occupied in 50-year increments, Fig. 7.8 does illustrate well that the Irish hillforts have a similar profile to those in Britain, but with some important differences. Unlike Britain, the establishment of a number of sites (for example Clashanimud, Rathnegree and Knock Dhu) occurs in the Middle Bronze Age, and the increase in sites seems to be starting about 100 years earlier than in Britain at around 1350 BC. They plateau between 1150–1050 BC, with a steady decrease from then on. Armit *et al.* (2014) examined a large number of Irish paleoclimatic and archaeological datasets from 1200 BC to AD 400 and recorded a marked peak in human activity around 1050 - 900 BC, followed by 100 years of steady decline to approximately 800 BC after which activity falls sharply away. Armit categorically disassociates population decline with climatic downturn, arguing population decline begins at least 100 years before the worst of the climatic downturn hits around 800 BC. Plunkett (2008) examined palynological data from four lowland raised bogs (in Co. Antrim, Co. Tyrone and Co. Fermanagh) which suggested good representations of arable farming in the Roscommon Phase of the Irish Bronze Age (*c.* 1200 – 1000 BC). This was followed by a contraction in settlement, agriculture and the associated woodland regeneration after *c.* 1000 BC, possibly suggesting a demographic fall. Other recent palynological studies in Ireland (i.e. Chique *et al.* 2017; Spencer *et al.* 2019; Taylor *et al.* 2018) have all demonstrated periods of intense human activity followed by decreasing levels of activity throughout this period (Gearey *et al.* 2020, 16). It is true to say that linking palaeoclimatic records and archaeological evidence risks environmental determinism, however Gearey *et al.* (2020, 23) suggests that by establishing the chronological relationship between the fluctuations seen in the archaeological, palaeoclimatological and palaeoecological records, it could help 'define potential scenarios and formulate hypothesis concerning climate and cultural changes, that can be tested through further research.' Whilst recognising that dates from only 12 Irish hillforts are included here, this graph would suggest that unlike Britain, the decline in Irish hillfort usage starts at 1050 BC. Importantly, we see the Irish and Atlantic British traditions could possibly be linked.

The main problem with comparing Irish and British Late Bronze Age hillforts/hilltop sites is the markedly different perspective seen in the two countries. As outlined in this study, Late Bronze Age hilltop sites in Britain have tended to be viewed as linked to agricultural practices - meeting places connected the pastoral seasonal calendar. In Ireland, the narrative is centred around the 'visible manifestation of elite authority and power' (O'Driscoll 2016, vi), seeing the construction of hillforts and evidence of their destruction as indicative of Late Bronze Age warfare amongst competing groups that emerged at the same time as weaponry linked to the European warrior tradition (O'Driscoll 2016, vi*)*. Even the origin of Irish hillfort building is linked to that of Europe: 'indigenous inputs notwithstanding, the origins of the hillfort in Ireland can be sought elsewhere. The phenomenon as a whole can be traced back to developments in Central and Eastern Europe in the Early Bronze Age' (O'Brien 2016, 222). This is best demonstrated by the name of the recent project detailed above: *Hillforts, Warfare and Society in Bronze Age Ireland* (O'Brien 2016) which leaves little doubt as to what Irish hillforts are thought to represent.

Is there any room between these two starkly different viewpoints for the possibility that there is more similarity between the two countries than would initially be thought? Macdonald (2016) links the creation of Irish hillforts with agriculture, both pastoral and arable, and sees the creation of open spaces between the earthworks at Knock Dhu inland promontory fort as a place for the corralling of stock. Mallory (1995)

postulates that a relationship exists between an intensification of arable agricultural activity and the building and occupation of hillforts. In the Navan area of eastern Ireland, environmental studies have demonstrated a number of clearance episodes throughout the Bronze Age that has been linked to intensive production of cereals. Excavations at Haughey's Fort uncovered a large quantity of carbonised barley from pits on the site with pollen from both rye and flax being found in contemporary levels of a nearby lake, as well as the faunal remains of mainly cattle (54.33% of the bone assemblage) and pigs (33.8%), with surprisingly little sheep (3.1%) (Waddell 2006, 216). At Dún Aonghase however, it is sheep that are most plentiful (52.3%), with cattle (33.5%) and pig (12.4%) being of less importance (Waddell 2006, 221). This agricultural intensification seems to end suddenly *c*. 1000 BC, the same time as Haughy's Fort was abandoned (Mallory 1995, 78-79). It is possible that the creation of hillforts was connected with an intensive form of arable agriculture being practised in their hinterlands that was unsustainable in the long-term. Once this type of agriculture could no longer be maintained, the hillforts associated with it were abandoned (Plunkett 2007, 233). This could explain their early emergence which coincides with an increase after 1500 BC of enclosed settlements such as Ballyutoag, Co Antrim (Macdonald *et al*. 2005) and village-like settlements with an agglomeration of structures found at sites like Corrstown, Co Londonderry which had a main phase of occupation between 1350-1150 BC (Ginn and Rathbone 2012; McSporran 2012). The end of this intensive phase could also have been responsible for the decrease in human activity seen by Armit *et al.* (2014) after 900 BC.

Other broad similarities exist in the assemblages being found at these sites and those of the sites in the Atlantic west of Britain examined in this thesis. A large ceramic assemblage was recovered from Haughey's Fort which the analysis of the organic deposits showed had contained materials derived from both plants and cattle. The same site yielded evidence of woodworking, with the presence of minute fragments of gold leaf and wire recovered from flotation believed by the excavator to indicate the presence of fine metalworking on the site (Waddell 2006, 217). More definite evidence of metalworking was uncovered at Dún Aonghase where fragments of clay moulds and two crucibles were found (Waddell 2006, 219). Excavations at Rathgall uncovered evidence for bronze metalworking and a large ceramic assemblage similar to that at Haughey's Fort (Raftery 1994, 58). The nature of the artefacts recovered from excavations at Late Bronze Age hillfort sites in Ireland might superficially suggest similarities with those found in the Atlantic west of Britain, however, without a detailed comparison of both datasets no firm conclusions can be drawn. There is evidence of links between Ireland and Britain dating as far back as the Early Bronze Age, with the Ross Island mine in SW Ireland providing Britain with much of its copper from *c*. 2400 BC onwards. An apparent wave of exploration from Ireland from *c.* 2200 BC seems to have been responsible for the establishment of copper mines in both Wales and NW England (Williams and Le Carlier de Veslund 2019). Irish Late Bronze Age metalwork has been found in Wales (K. Waddington pers. comm. 2021*),* therefore, it is possible that these old links were still having an effect well into the Late Bronze Age.

Whilst links with agricultural practices may be similar in both countries, there are enough differences between the two groups that would suggest different motivations behind their creation. The most obvious difference is the level of occupation seen in Irish and British LBA hilltop sites. The evidence of occupation in Irish hillforts suggest that, unlike the British sites, they were densely occupied during this

period. For example, Knock Dhu has 104 potential hut circles right across the site arranged in a series of clusters and rows that implies a degree of contemporaneity (Macdonald 2016, 33). When an excavated site presents with little occupation evidence, for example at Clashanimud, the conclusion reached is that it acted as a defensive refuge (Macdonald 2016; O'Brien and O'Driscoll 2017), very different from the conclusions reached in this work and others explaining the lack of settlement evidence at British sites. O'Brien (2016) and O'Driscoll (2016), as well as Fig. 7.6 demonstrate that the Irish hillforts emerged as a phenomenon at least 100 years before hilltop sites in the west of Britain. This would imply that the societal demands that were driving their creation were different from those that led to the start of building hilltop sites in Britain at least a century later and could therefore be linked more to conflict than those in Britain.

7.6 SUMMARY

This chapter has sought to bring together the *who, what, where, when* and finally *why* hilltops were enclosed during the Late Bronze Age in the Atlantic west of Britain. Although increased excavation at hilltop sites would enable more concrete conclusions to be drawn, what has been demonstrated here is that these sites were constructed at a time when society was changing, possibly to provide a location to support pastoral agriculture in areas that had previously had a different agricultural focus, thus ensuring that these important landscapes were still playing a significant role within society. Negotiating societal change means the bringing together of people to ensure transitions were safely navigated by the community as a whole. These Late Bronze Age hilltop sites would have been the prime location for people to come together as a community, both in their construction and subsequent usage, providing a very visual statement to those within the community about belonging and possibly to those outside their community about who controlled that landscape. They should no longer be seen as lesser structures when compared with the more developed, classic hillforts of the Middle Iron Age; but as different places that played a central role in a society negotiating great changes during a time of both climatic and communal flux.

CHAPTER EIGHT

CONCLUSIONS AND CRITICAL REVIEW

8.1 Late Bronze Age hilltop sites – a narrative

Slowly starting at around 1250 BC, peaking in the 10th century BC, and dropping off by the Early Iron Age, communities in the Atlantic west of Britain started to come together to utilise and enclose hilltops within their landscapes. These were usually in prominent locations, on the highest or towards the highest hilltops in the area and often sited to control communication links such as navigable rivers or maritime routes. Some communities used these hilltops for a time before enclosing them, for others, the first utilisation of hilltops started with enclosure. Coinciding with this four-hundred-year period was a time of societal upheaval with evidence emerging of deteriorating climatic conditions, diversification within both arable and pastoral agriculture, developments in settlement architecture and changes within depositional practices that saw a huge increase of metalwork being deposited within the landscape after 1300 BC peaking between 900-800 BC.

Communities were changing; the relative stability of the Middle Bronze Age being replaced by restructuring and developments, seen in the agricultural, depositional, and architectural records from this time. This was not a sudden catastrophic change, rather a slow accumulation of events, such as repeated wet years resulting in bad harvests that meant that arable farming was becoming increasingly hard to sustain on land that had been used this way for generations. It was into this milieu that we see the first hilltops being enclosed. Their purpose was multi-faceted (pastoral agriculture and communal gatherings), but important enough for communities to expend significant effort in their creation. Enclosure was the most important element, not just functional enclosure seen in the lowland settlements where the bulk of the population lived, but monumental enclosure with palisades and ramparts designed to be seen from afar. There is tentative evidence from The Breiddin (Powys) that gang-working may have been involved in the building of these ramparts, as well as from Penycloddiau (Denbighshire) (Musson 1991; Mason and Pope 2019). Having different communities contributing, perhaps fostering a competitive spirit between these groups, may have promoted community cohesion, and provided a unique location within the landscape to inspire pride, loyalty, and a sense of belonging. The hilltop enclosure was a very visible manifestation of the community that had come together to create it.

However, these were practical monuments too. With uplands being increasingly given over to pastoral agriculture, these hilltop enclosures supported the livestock management activities now taking place there. Evidence for the importance of water sources when deciding which hilltop to enclose underlines the fact that for at least part of the year, people and herds of animals were probably living at these locations. They would have provided a safe haven from not only wild animals but from potentially competing groups of people. There is evidence for violence in the Late Bronze Age: swords and shields showing wear patterns consistent with use (Uckelmann and Mõdlinger 2011) and, more rarely, bodies showing the traumatic results of interpersonal violence found in Tormarton (Gloucestershire) dated to

1315-1045 BC (Osgood 2008, 340), both geographically and chronologically consistent with the construction of these hilltop enclosures. Whilst not evidence for large-scale warfare, this does show that communities were perhaps under pressure and vying for resources in a changing world. Hilltop enclosures would have provided a place of safety for people and animals when they were at their most vulnerable, away from the protections afforded by proximity to the main centres of population.

Whereas Irish scholars see the rise of hilltop enclosures in the transition period between the Middle and Late Bronze Age as being a direct result of warfare, this was not the sole reason for the creation of western British hilltop enclosures. Whilst they did provide a protective base, they were more than just a glorified stockade. Unlike their Irish counterparts, western British hilltop enclosures were not created as a place for permanent dwelling, however it is clear that people did gather on these hilltop sites, often in large enough numbers to leave behind evidence of their presence. The ceramic evidence points to communal gathering and eating being important, and it is likely that they played host to seasonal assemblies where normally widely dispersed members of the community could come together, perhaps similar to lowland middens in that respect. The evidence for personal adornment and grooming shows that this was not just a practical gathering of the herds, but a more social one where it was important to look one's best. It would be during these gatherings that exchange deals were made, disputes settled, conjugal relationships arranged – the activities that provide the social cohesion necessary for normally widely-spread populations to feel part of a bigger community. However, this is not a single, monolithic category of settlement; different sites would have played different roles within their local communities. The more established hilltop enclosures may have drawn in people from much wider areas that the smaller, less-developed ones, perhaps being places important on a more regional scale than the smaller, more local sites. But in all cases, these sites would have helped foster a group identity vital to their survival in a time of upheaval and change. Periods of transition can be difficult, indeed painful for communities used to prolonged settled times, and it was in those unsettled times that hilltop enclosures were created to provide a focus for their community to ensure their continued wellbeing.

8.2 Aims met and research questions answered?

The central objective of thesis was to investigate *why* hilltops started to be enclosed by communities towards the end of the Bronze Age in the Atlantic west of Britain. Both this region and monument type have not received as much academic attention as, for example, Iron Age hillforts in central southern Britain – this thesis is an attempt to redress the balance. This section will provide a succinct critical overview of the research carried out here, evaluating the contribution this thesis makes to the study of later prehistory in Britain, as well as suggesting areas for future work to further progress the field. It finishes with a narrative summary of the conclusions made from the analysis which takes place in this thesis.

8.2.1 Geographical scope

The rational for the geographical scope of this work was outlined in the Introduction. The wider European Atlantic seaboard, of which the Atlantic west of Britain is an important element, has seen coastal connections throughout the entire geographical area from the Neolithic to the Early Modern

period (Cunliffe 2017; Duggan 2018). Britain was part of a wider, interconnected region in the Late Bronze Age as the links with Ireland examined here would suggest. Since 2017, the CHERISH (Climate, Heritage and Environments of Reefs, Islands and Headlands) Project have been investigating the impact of climate on coastal communities in west Wales and SE Ireland, emphasising the growing importance of understanding what was happening to these communities during this time period. This thesis, therefore, works well with the CHERISH Project in advancing our knowledge of the Atlantic west of Britain during this important transitional period.

In examining this geographical region, it has become apparent that the modern county regions do not match what seems to be happening in prehistory. Whilst Somerset is part of the SW England case study area, the results of the analysis of both the settlement and material culture evidence here show that it has more in common with the Wessex region further east. Similarly, the promontory sites of SW Wales and the SW peninsular of England (the Pembrokeshire/Carmarthenshire and south Cornwall case study areas) also seem to stand apart, with cultural ties with each other being suggested and potentially with SE Ireland, rather than with geographically closer but inland areas. This again links in nicely with the geographic scope of the CHERISH Project, adding to the growing evidence of possible links across the Irish Sea during the Late Bronze Age.

What has also become apparent since the initial 40 hilltop sites were selected for this study is that there is more Late Bronze Age activity occurring in North Wales than has been included in this analysis. The double ringwork enclosures of the Llyn Peninsular (of which only Castell Odo was in this database) should be widened to include Meillionydd (the only other excavated site), as well as the other 8 ringwork enclosures, which although unexcavated are typologically very similar and therefore should be treated as Late Bronze Age. As discussed in the Introduction, increasingly common glimpses of Late Bronze Age activity are being seen at numerous sites in North Wales. With hindsight, and using the evidence from recent excavations, Late Bronze Age hilltop enclosures in North Wales now seem to have been more common than previously thought, and increasingly worthy of study in their own right.

8.2.2 The dataset

This thesis has presented evidence from 40 hilltop and 20 non-hilltop sites, teasing out as much information as possible from a relatively small dataset. Due to the nature of prior investigation of sites in this region, with many sites either having little or no excavation, or excavations taking place solely on ramparts using more outdated methods, difficult decisions on what sites should be included were always going to have to be made. The inclusion of some sites within this analysis that have never been investigated, but are typologically very similar to sites with Late Bronze Age evidence, could be seen by some to be controversial. This dataset was constantly under review, with four sites removed after the data-driven chapters had already been written, meaning that those that are left do represent a group of sites that have a valid claim to be Late Bronze Age hilltop enclosures, whether they have been excavated or not. Indeed, as already discussed, the number of sites could now be significantly expanded with a number of sites in North Wales requiring inclusion. As the Cheshire Sandstone Ridge hillforts demonstrate, even with limited modern investigation, evidence of a Late Bronze Age phase

before the Iron Age hillfort construction is increasingly being evidenced. It is hoped that the CHERISH Project will uncover even more such sites over the course of its investigations. We also look forward to the results of the Penycloddiau dating program, which will examine 20 dates from the site using Bayesian analysis. That notwithstanding, this thesis has shown that even with a relatively small dataset, a considerable amount of knowledge can be gleaned, which will be of great assistance to scholars interested in this period.

However, problems have been encountered with some of the data used here. Unlike modern, developer-led excavations using the latest excavation techniques and sampling regimes (which occurred on most of the non-hilltop sites), the age and nature of hilltop excavations has meant that the dating for some sites is either from unsecure samples or from single locations, such as ramparts, that do not adequately represent activity on the site. Although the dates used for the chronology established here, with an unusually early start in the Late Bronze Age for a few sites, came from secure samples, the conclusions would be strengthened by further work increasing the number of sites and dates included in the dataset. This is potentially a very exciting area of further work, which could shed further light on what was occurring within the communities of the Atlantic west of Britain during this transitional period.

8.2.3 The climate change question

The most up-to-date scientific evidence for a climatic downturn taking place during the course of the Late Bronze Age, examined in this thesis, does make a convincing case for the deterioration in the weather to colder and wetter conditions culminating at *c*. 850 BC. Taking the excavated evidence into consideration, it is suggestive of communities during this period finding new ways of operating. Their agricultural practices, with a new emphasis on pastoralism, and building strategies that ultimately led to hilltop enclosures being created to accommodate livestock and host episodic communal gatherings, are evocative of communities negotiating more difficult conditions. However, there are problems that impact on these conclusions. The quantity of information, the quality of the climatic data itself and its relevance to each study area means that the conclusions reached here, whilst valid, could be strengthened even more by targeted work focusing on obtaining fine quality data for both study areas. Instead of depending on climatic data from Scandinavia, Scotland and Ireland, specialised investigation to identify climate change, for example from peat cores taken at these hilltop sites, would enable a more definitive examination of the effect this climate change had on Late Bronze Age communities and their responses to it.

8.2.4 So what?

When setting out on this thesis, the main aim was to try to understand what was happening during the Late Bronze Age that resulted in the creation of hilltop enclosures. In limiting the geographical scope to the Atlantic west of Britain, it was also the aim to increase our understanding of what was occurring in a region that, whilst less investigated than central southern England, presented exciting possibilities of ties across the sea towards Ireland. Even with the limitations already set out, this thesis has succeeded

in synthesising the information that can be gleaned from the available data, showing that Late Bronze Age hilltop enclosures in the Atlantic west of Britain were very different monuments to Iron Age hillforts. Their purpose was a response to particular circumstances prevailing at that time, making them not a pale facsimile of later hillforts, but a vibrant class of monuments in their own right. This thesis has shown that these hilltop enclosures played an important role in Late Bronze Age communities, being a central hub for the pastoral agricultures that was becoming more important. But more than that, they were places where the community could come together to negotiate increasingly challenging times. Analysis of the material culture found on these sites has suggested that personal appearance was important, that eating, and drinking played a large part in what occurred there. The fact that enclosure was fundamental, and that they were places where the deposition of valuable metalwork was deemed appropriate, suggests that these hilltop sites were places that were key to the communities' response to the changes being seen throughout society during this transitional period. Whilst more work is needed to explore these conclusions further, this thesis has now established a baseline understanding of Late Bronze Age hilltop enclosures that can only be strengthened.

8.2.5 Future research recommendations

There are a few areas where it has become apparent that additional research would progress what has now begun with study:

- More excavation of hilltop sites in the Atlantic west of Britain is the single most important area that would help gain a more rounded understanding of any Late Bronze Age phases uncovered. As Cheshire's Habitats and Hillforts Project shows, surprising numbers of sites did have Late Bronze Age evidence – if this could be expanded, the increased number of sites with well sampled and documented LBA evidence would clearly strengthen the conclusions reached in this work. Projects such as CHERISH and investigations of double ringworks on the Llyn Peninsular in North Wales are excellent opportunities for more evidence to be uncovered.
- A re-examination of dating evidence for Late Bronze Age hilltop sites would clarify still further when the commencement of building hilltop enclosures occurred. This is vital in understanding whether they were influenced by Irish or Wessex traditions, or indeed if they developed independent of either of them. The 20 radiocarbon dates from Penycloddiau will help here.
- Specialist investigation of the paleoclimatic evidence from the case study area would further assist in understanding the influence that climate change had on the creation of Late Bronze Age hilltop enclosures.
- A more detailed examination of the possible contacts between Ireland and the Atlantic west of Britain would be invaluable in establishing how strong the links were across the Irish Sea.
- An interesting project would be one that looked at whether there are any links between the establishment of hilltop enclosures in the Late Bronze Age for communal events and the start of middens being places of feasting and celebration. Are the two linked, or did they develop independent of one another?

It is hoped that the analysis done in this thesis will aid future scholars in the task of developing a deeper understanding of Late Bronze Age hilltop enclosures. Any future work outlined above undertaken would only strengthen this understanding of these enigmatic and fascinating monuments.

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APPENDIX 1

DATA QUALITY GRADING FOR HILLTOP SITES

Excellent	Good	Fair	Poor
The Breiddin	Bryn Maen Caerau	Pendinas Lochtyn	Crowther's Camp
Beeston	Caer Cadwgan	Coygan Camp	Darren Camp
Dinorben	Castell Odo	Moel y Gaer, Rhosesmor	Lluest y Trafle
South Cadbury	Dale Fort	Porth y Rhaw	Castell Rhyfel
	Eddisbury	Great Castle Head	Tower Point Rath
	Norton Fitzwarren	Berry Hill Wood	Kendijack
	Killibury	Ffridd Faldwyn	Trencrom
	Ham Hill	Llwyn Bryn-Dinas	Maen Camp
		Old Oswestry	Castle An Dinas
		The Wrekin	Bosigran
		Kelsbarrow	Lescudjack
		Helsby	
		Woodhouse	
		St Michael's Mount	
		Hambleton Hill	
		Chalbury	
		Poundbury	

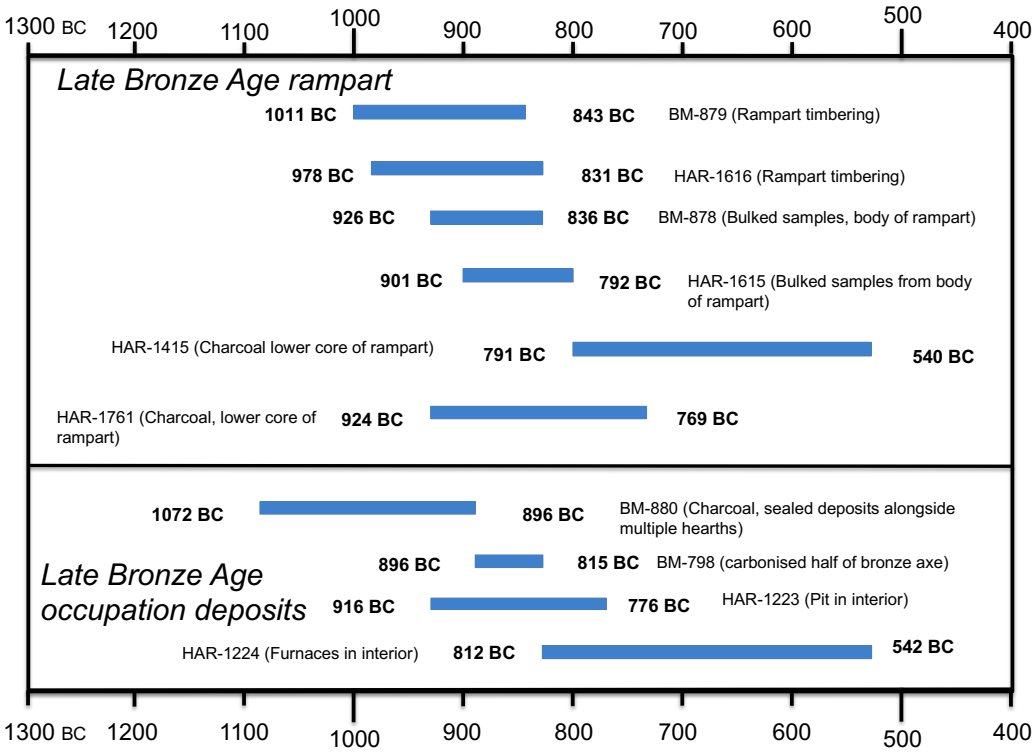
APPENDIX 2

RADIOCARBON DATES FOR ALL CASE STUDY HILLTOP AND NON-HILLTOP SITES

WALES/MARCHES

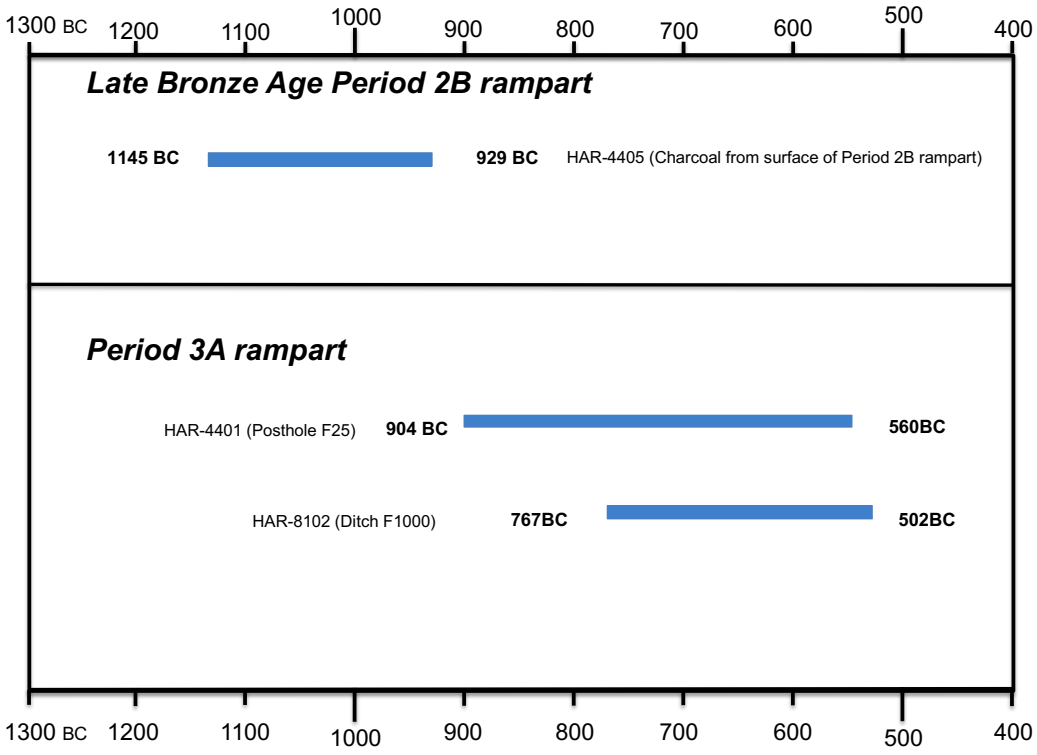
The Breiddin (Musson 1991)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Late Bronze Age Ramparts				
BM-879	2778 +/- 71 BP	1011 - 843 BC	1124 - 807 BC	Rampart timbering, post-sockets within foundation gully B01 (0141),
HAR-1616	2760 +/- 70 BP	978-831 BC	1107 - 802 BC	Rampart timbering, post-sockets within foundation gully B01 (0141),
BM-878	2750 +/- 41 BP	926 - 836 BC	996 - 816 BC	Bulked samples from or immediately above paired postholes from body of rampart
HAR-1615	2690 +/- 70 BP	901-792 BC	1003 - 563 BC	Bulked samples from or immediately above paired postholes from body of rampart
HAR-1415	2510 +/- 60 BP	791 - 540 BC	805 - 408 BC	Charcoal from lower core of rampart, above rear line of postholes in B04
HAR-1761	2690 +/- 80 BP	924-769 BC	1055 - 571 BC	Charcoal from lower core of rampart, above rear line of postholes in B04
Late Bronze Age occupation deposits				
BM-880	2818 +/- 64 BP	1072 - 896 BC	1191-827 BC	Charcoal from sealed deposits in B01, alongside multiple hearth 0133
BM-798	2704 +/- 50 BP	896 -815 BC	974 - 797 BC	Carbonised haft of socketed bronze axe No 138
HAR-1223	2660 +/- 80 BP	916 - 776 BC	1014 - 544 BC	Pit in interior, 5161
HAR- 1224	2560 +/- 90 BP	812 - 542 BC	892 - 410 BC	Furnaces & working hollows in interior, 5164/58/67


1300 BC
1200
1100
1000
900
800
700
600
500
400
Late Bronze Age rampart
1011 BC
843 BC
BM-879 (Rampart timbering)
978 BC
831 BC
HAR-1616 (Rampart timbering)
926 BC
836 BC
BM-878 (Bulked samples, body of rampart)
901 BC
792 BC
HAR-1615 (Bulked samples from body of rampart)
HAR-1415 (Charcoal lower core of rampart)
791 BC
540 BC
HAR-1761 (Charcoal, lower core of rampart)
924 BC
769 BC
1072 BC
896 BC
BM-880 (Charcoal, sealed deposits alongside multiple hearths)
Late Bronze Age occupation deposits
896 BC
815 BC
BM-798 (carbonised half of bronze axe)
916 BC
776 BC
HAR-1223 (Pit in interior)
HAR-1224 (Furnaces in interior)
812 BC
542 BC

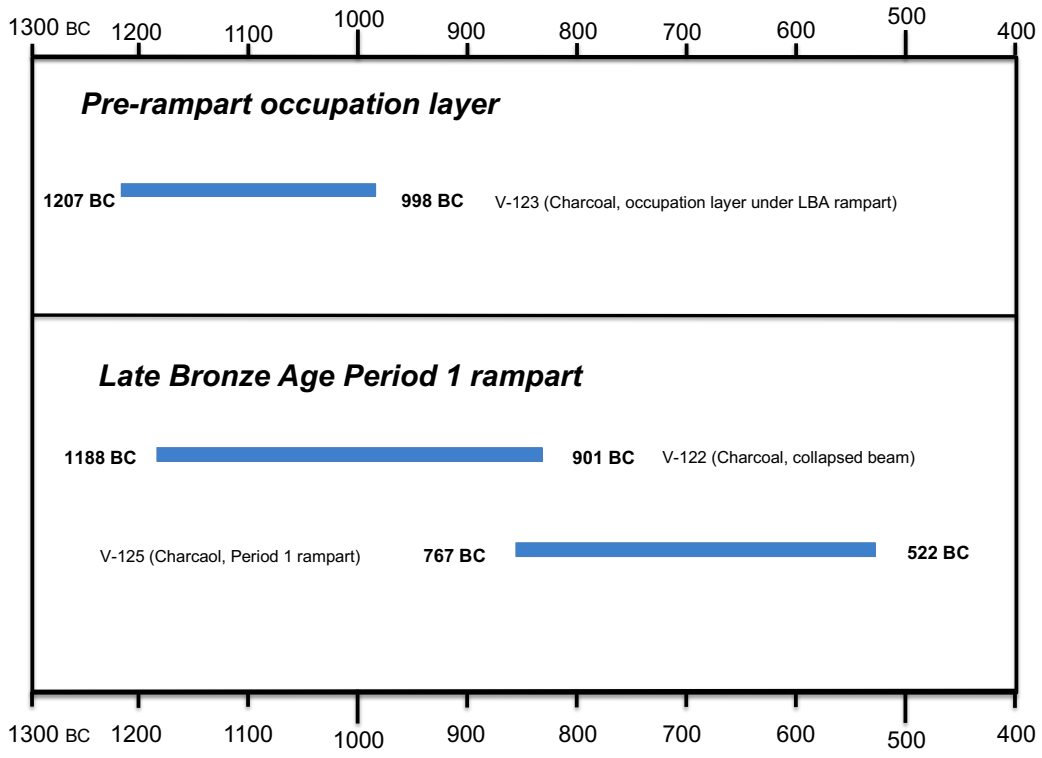
Beeston Castle (Ellis 1993)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Late Bronze Age Period 2B Rampart				
HAR-4405	2860 +/- 80 BP	1145 - 919 BC	1260 - 837	Outer Gateway - Charcoal from surface of Period 2B Rampart
Early Iron Age Period 3A				
HAR-4401	2620 +/- 90 BP	904-560 BC	996 - 434 BC	Outer Ward posthole F25 Period 3
HAR-8102	2480 +/- 70 BP	767 - 522 BC	782 - 414BC	Outer Gateway ditch F1000 Period 3A



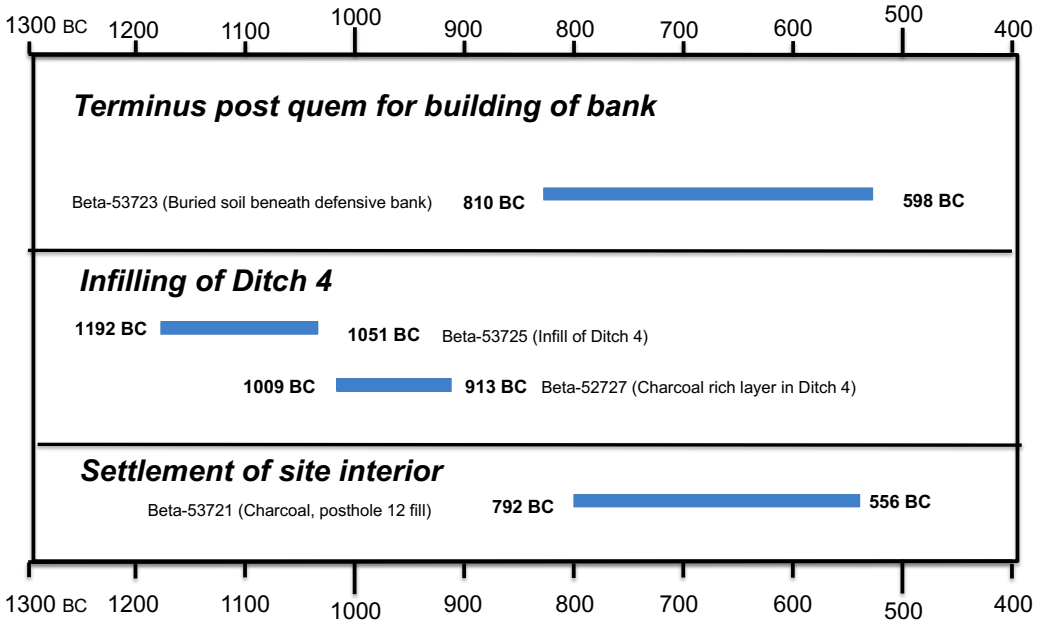
Dinorben (Savory 1971)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Pre Rampart Occupation layer				
V- 123	2895 +/- 95 BP	1207 - 998 BC	1282 - 902 BC	Charcoal from occupation layer underneath LBA rampart
Late Bronze Age Period 1 Rampart				
V-122	2845 +/- 95 BP	1188 - 901 BC	1263 - 902 BC	Charcoal from collapse beam to NE of Period I rampart
V-125	2715 +/- 85 BP	972 - 802 BC	1121 - 761 BC	Charcoal from north-east slope of hollow between Period I-II rampart remains and inner revetment wall of Period IV (probably derived form Period I rampart)



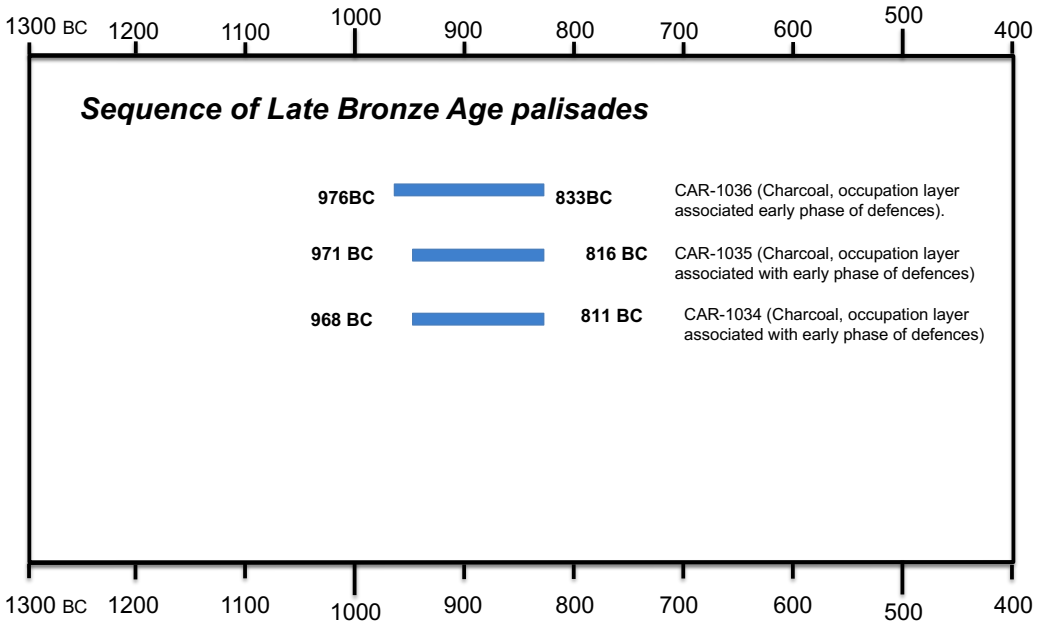
Berry Hill (Murphy and Mytum 2012)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Terminus post quem for building of bank				
Beta-53723	2580 +/- 40 BP	810 - 598 BC	822 - 550 BC	Layer 22 buried soil beneath defensive bank, clear turf line beneath bank.
Infilling of Ditch 4				
Beta-53725	2920 +/- 40 BP	1192 - 1051 BC	1257 - 1003 BC	Layer 37 loose stone fill at base of Ditch 4. Dates from early in the infilling of the ditch
Beta-52727	2810 +/- 40 BP	1009 - 913 BC	1073 - 843 BC	Charcoal rich layer in Ditch 4, 2/3rd up ditch, late phase of infilling
Use of interior of site				
Beta-53721	2530 +/- 40 BP	792 - 556 BC	800 - 540 BC	Charcoal from fill of posthole 12, from line of postholes in interior of site. Excavator reports could be from buried soil from beneath the rampart & not related to site.



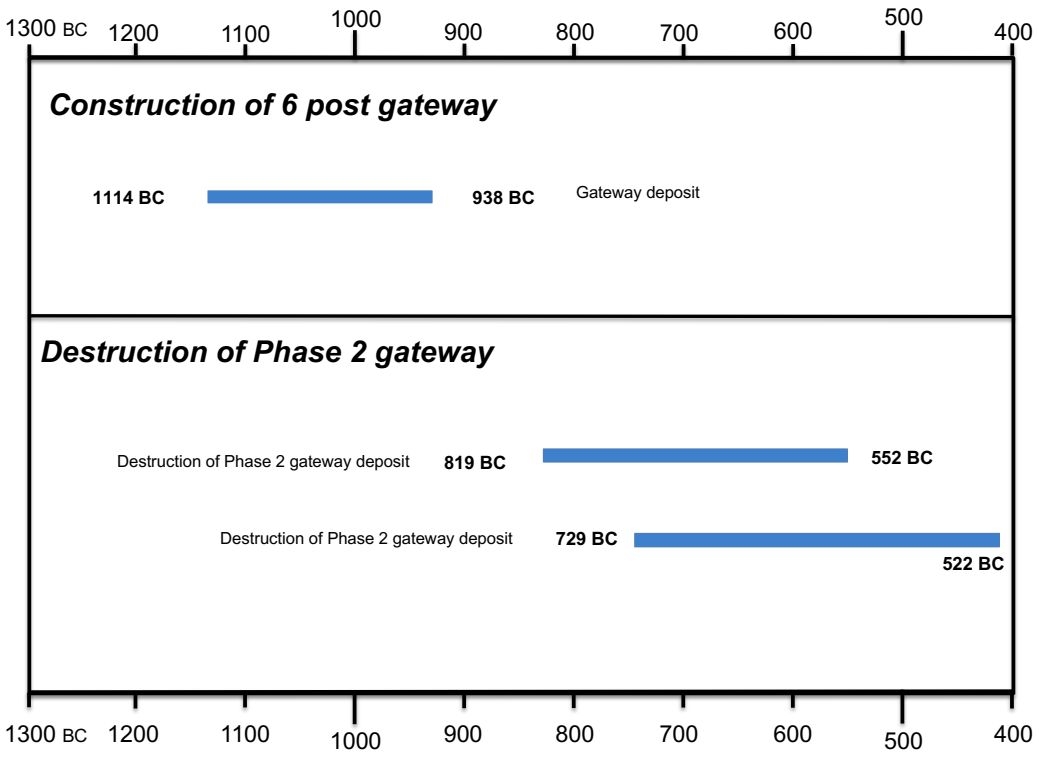
Dale Fort (Williams 1988)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Sequence of Late Bronze Age palisades				
CAR-1036	2760 +/- 60 BP	976 - 833 BC	1047 - 803 BC	Charcoal from occupation layer associated with early phase of defences.
CAR-1035	2740 +/- 70 BP	971 - 816 BC	1054 - 796 BC	Charcoal from occupation layer associated with early phase of defences.
CAR-1034	2730 +/- 70 BP	968 - 811 BC	1044 - 795 BC	Charcoal from occupation layer associated with early phase of defences.



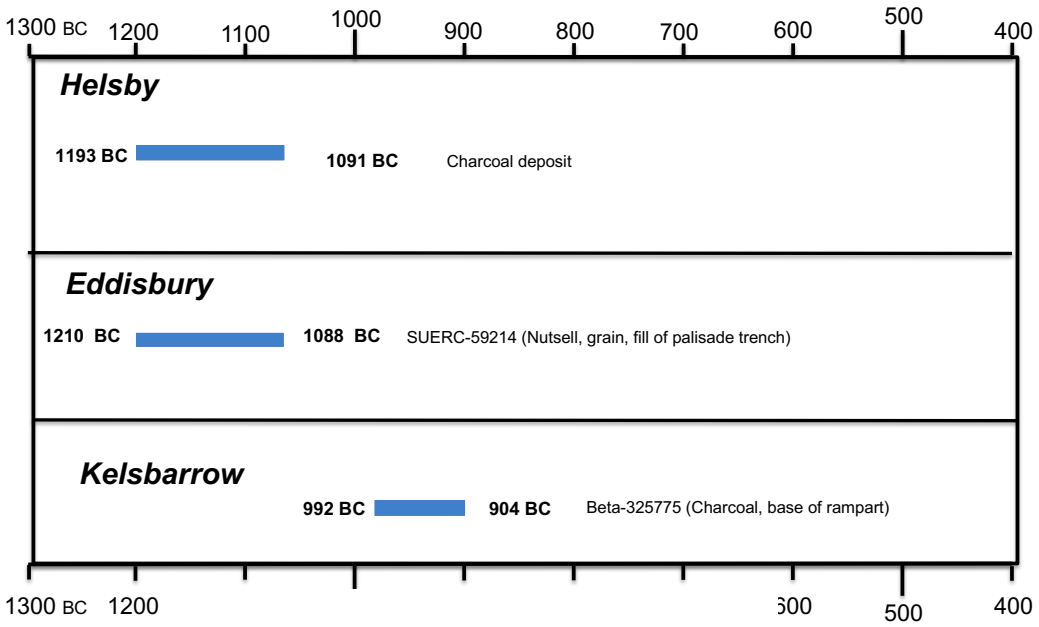
Caer Cadwgan (Dresser 1987; Davies and Hogg 1994)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Construction of 6 post gateway				
	2850 +/- 70 BP	1114 - 938 BC	1215-844 BC	Deposit from 6 post gateway
Destruction of Phase 2 Gateway				
	2580 +/- 70 BP	819-552 BC	898-488 BC	Destruction layer from Phase 2
	2360 +/- 70 BP	729 - 372 BC	760 - 231 BC	Destruction layer from Phase 2



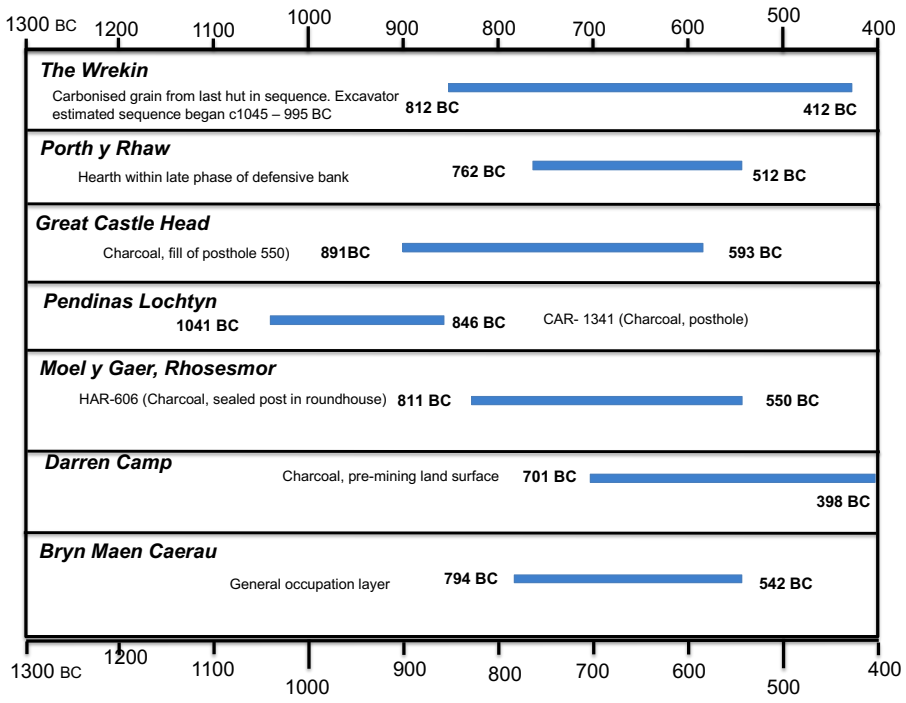
Cheshire Ridge (Garner 2012; Pope 2019; Pope *et al.* 2020)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Helsby				
	3115 +/- 20 BP	1423 - 1322 BC	1435 - 1303 BC	Inner face of earliest rampart phase. Extremely early date
	2929 +/- 15 BP	1193 - 1091 BC	1207 - 1055 BC	Charcoal colluvial deposit from further up the silting against back of rampart
Kelsbarrow				
Beta-325775	2790 +/- 30 BP	992 - 904 BC	1011 - 846	Charcoal from base of rampart
Eddisbury				
SUERC-59214	2935 +/- 31 BP	1210 - 1088 BC	1226 - 1024 BC	Nutshell and grain from fill of ?LBA posthole from original palisade construction



Single Date Sites (Crane 1999; Guilbert 1975; Scott and Murphy 1992; Stanford 1984; Timberlake 2006a)

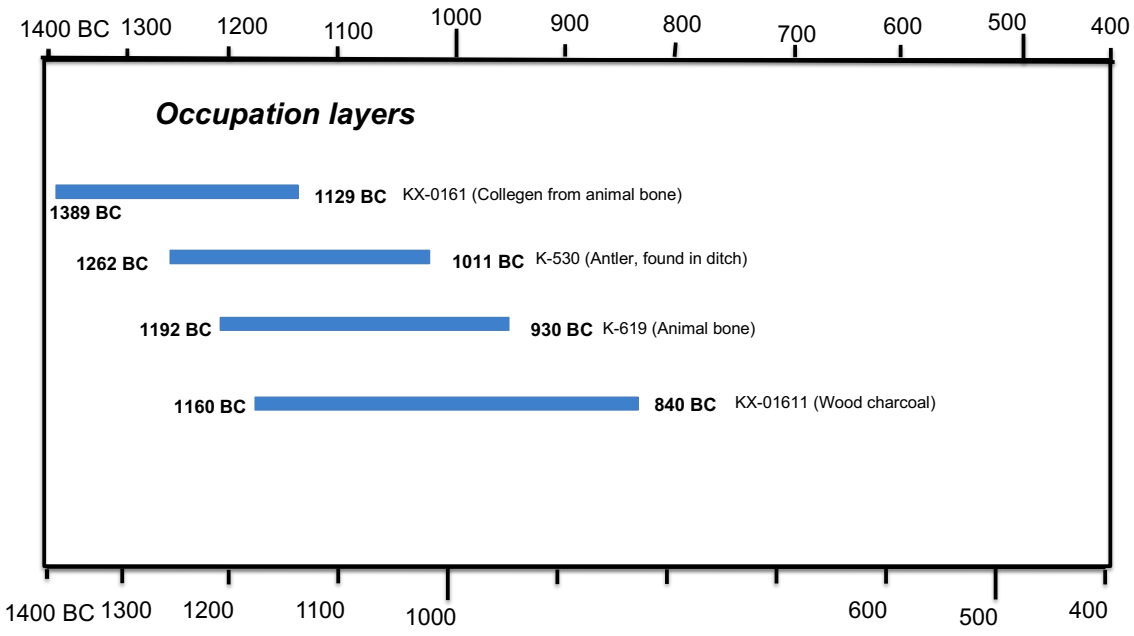
Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
The Wrekin				
	2520 +/- 180 BP	812 - 407 BC	1082 - 198 BC	Carbonised grain from hut last in sequence. Excavator estimated 80 years / hut, first hut established c1075 - 995 BC
Porth y Rhaw				
	2570 +/- 70 BP	762 - 512 BC	776 - 410 BC	Hearth within late phase of defensive bank
Great Castle Head				
	2610 +/- 60 BP	891 - 593 BC	908 - 543 BC	Charcoal from fill of posthole 550
Pendinas Lochtyn				
CAR-1341	2800 +/- 70 BP	1041 - 846 BC	1154 - 811 BC	Charcoal from isolated posthole in north corner of trench
Moel y Gaer, Rhosesmor				
HAR-606	2570 +/- 70 BP	811-550 BC	891-431 BC	Charcoal from occupation soil of sealed post in roundhouse
Darren Camp				
	2390 +/- 50	701 - 398 BC	751-386 BC	Charcoal from pre-mining surface
Bryn Maen Caerau				
CAR-1070	2520 +/-70 BP	794-542 BC	802-430 BC	Occupation layer 293 associated with pits and postholes



SOUTHWEST ENGLAND

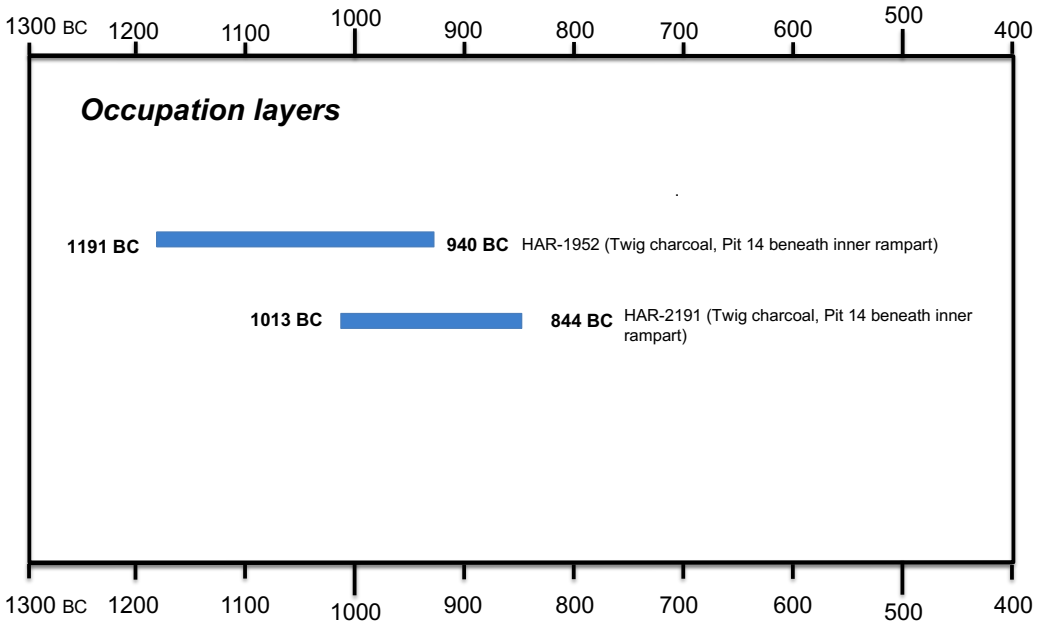
South Cadbury (Barrett *et al.* 2000)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
KX 0161	3014 +/- 75 BP	1389 - 1129 BC	1430 - 1031 BC	Collagen from animal bone
K 530	2935 +/- 90 BP	1262 - 1011 BC	1395 - 916 BC	Antler found in ditch also containing bone & flint. Ditch perpendicular to row of posts
K 618	2875 +/- 90 BP	1192 - 930 BP	1368 - 916 BC	Animal Bone
KX 01611	2820 +/- 110 BP	1160 - 840 BC	1320 - 800 BC	Wood charcoal



Killibury (Miles *et al.* 1977)

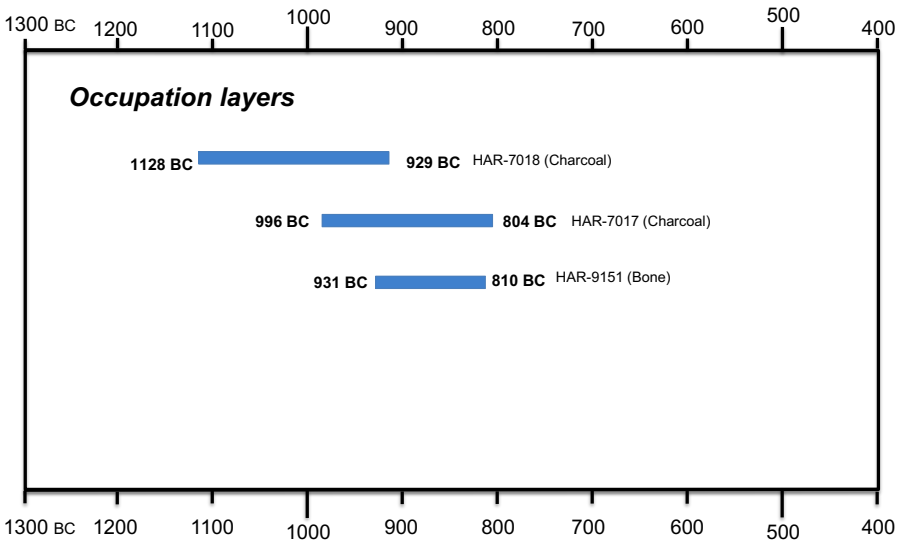
Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Pre rampart phase				
HAR - 1952	2880 +/- 70 BP	1191 - 940 BC	1266 - 856 BC	Twig charcoal from Pit 14 beneath inner rampart
HAR-2191	2790 +/- 70 BP	1013 - 844 BC	1123 - 808 BC	Twig charcoal from Pit 14 beneath inner rampart



NON-HILLTOP SITES

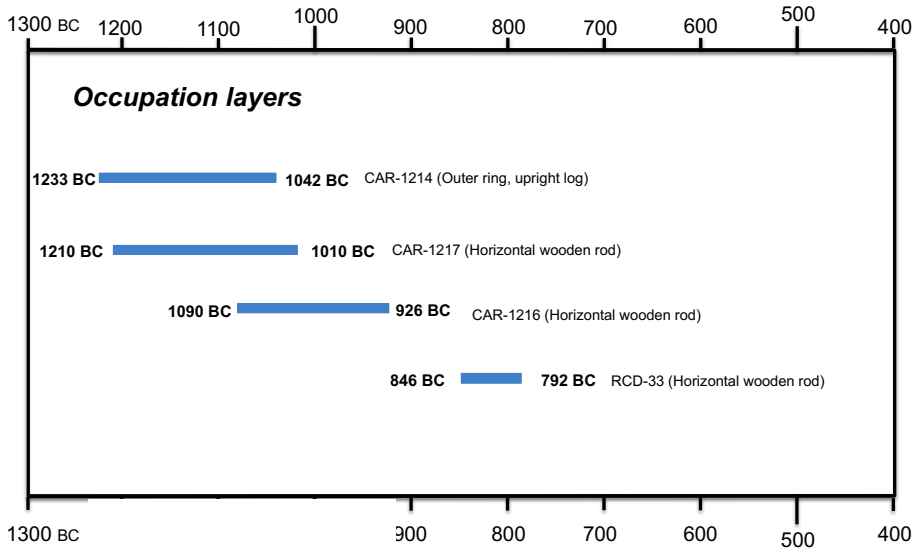
Brean Down (Bell 2015)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
HAR-7018	2870 +/- 80 BP	1168 - 929 BC	1263 - 843 BC	Charcoal
HAR-7017	2730 +/- 100 BP	996 - 804 BC	1211 - 593 BC	Charcoal
HAR-9151	2730 +/- 70 BP	968 - 811 BC	1044 - 795 BC	Bone



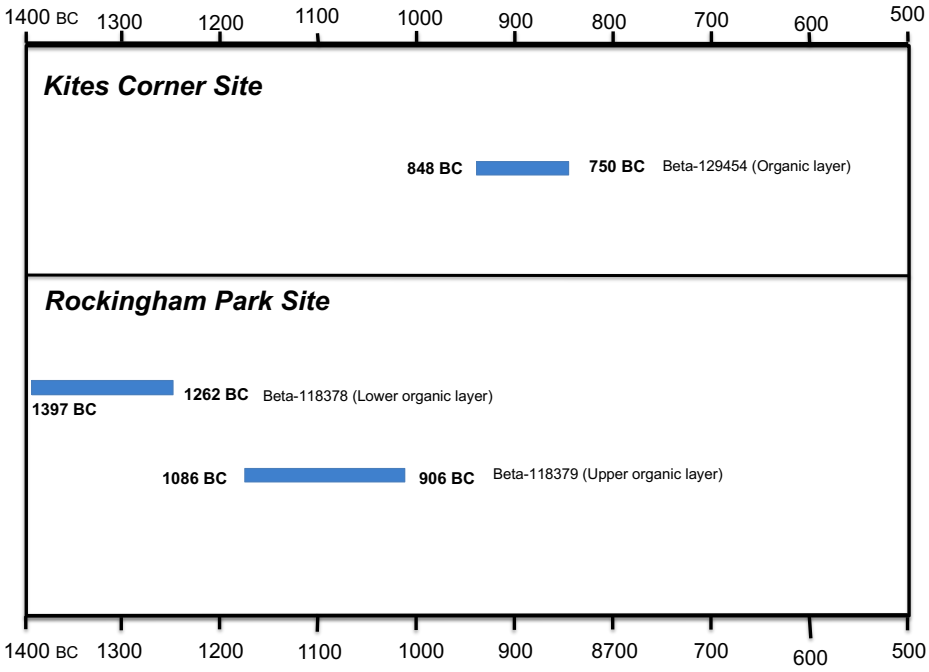
Caldicot Castle Lakes (Parry 1990)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
CAR-1214	2940 +/- 70 BP	1258 - 1042 BC	1384 - 936 BC	Outer ring - whole upright log
CAR-1217	2910 +/- 70 BP	1210 - 1010 BC	1369 - 912 BC	Horizontal roundwood rod
CAR-1216	2850 +/- 60 BP	1109 - 929 BC	1210 - 853 BC	Horizontal roundwood rod
RCD - 33	2650 +/- 50 BP	892 - 792 BC	916 - 769 BC	Horizontal roundwood rod



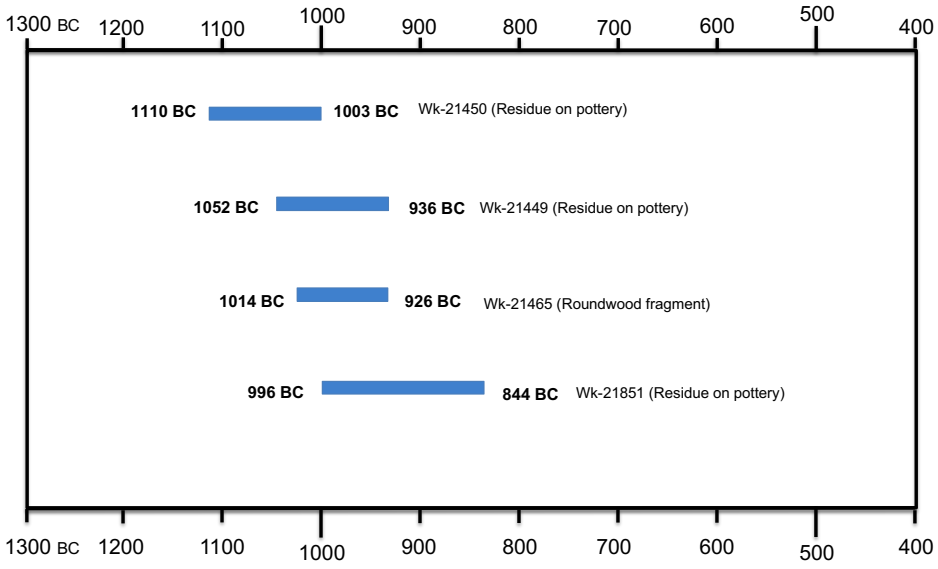
Cabot Park (Locock 2001; Locock *et al.* 1998)

Cabot Park (Rockingham Farm)	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Beta - 118378	3060 +/- 50 BP	1397 - 1263 BC	1434 - 1131 BC	Lower organic layer
Beta - 118379	2830 +/- 70 BP	1107 - 906 BC	1207 - 833 BC	Upper organic layer
Cabot Park (Kites Corner)				
Beta - 129454	2610 +/- 70 BP	848-750 BC	921-524 BC	Organic layer



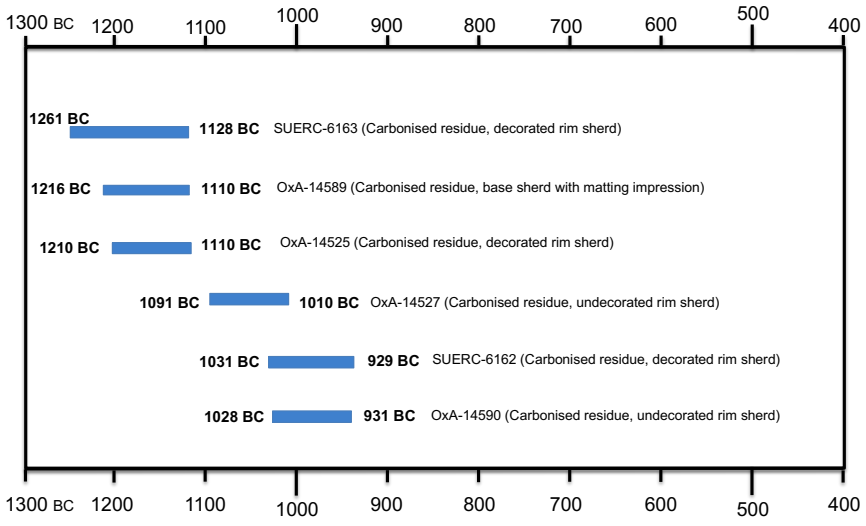
Scarcewater (Jones and Taylor 2010)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Wk-21450	2871 +/- 32 BP	1110 - 1003 BC	1189 - 930 BC	Residue on pottery
WK-21339	2825 +/- 34 BP	1052 - 936 BC	1112-922 BC	Residue on pottery
Wk-21465	2825 +/-34 BP	1014 - 926 BC	1107-901 BC	Roundwood fragment
Wk-21851	2762 +/- 31 BP	968 - 844 BC	996-832 BC	Residue on pottery



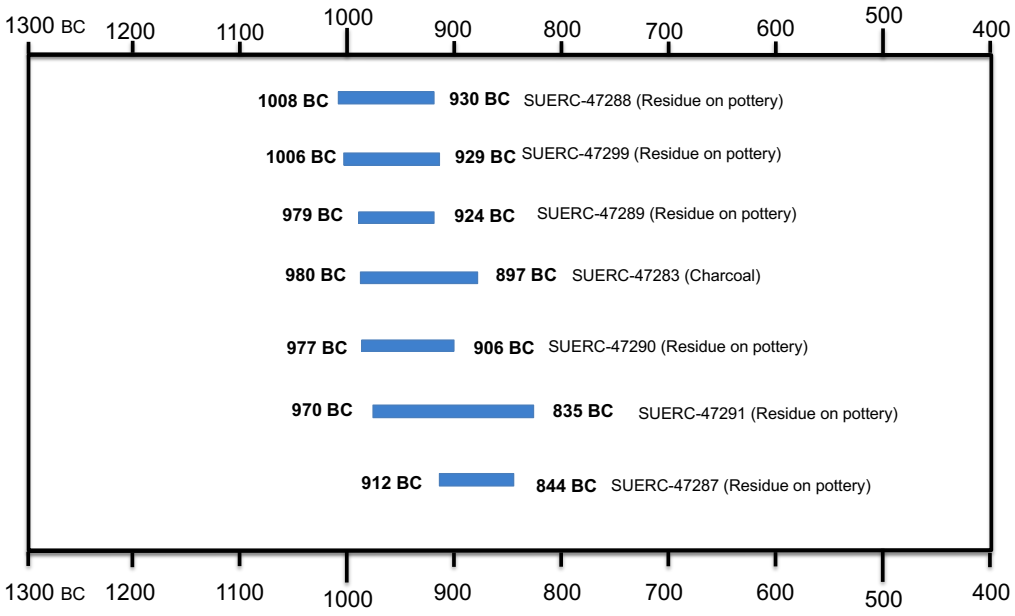
Gwithian (Nowakowski *et al.* 2007)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
SUERC-6163	2980 +/- 35 BP	1261 - 1128 BC	1374 - 1058 BC	Carbonised residue, decorated rim sherd
OxA-14589	2944 +/- 33 BP	1216 - 1110 BC	1260 - 1043 BC	Carbonised residue, base sherd with matting impression
OxA-14525	2946 +/- 27 BP	1210 - 1110 BC	1257 - 1051 BC	Carbonised residue, decorated rim sherd
OxA-14527	2878 +/- 29 BP	1091 - 1010 BC	1190 - 939 BC	Carbonised residue, undecorated rim sherd
SUERC-6162	2835 +/-35 BP	1031 - 929 BC	1110 - 909 BC	Carbonised residue, decorated rim sherd
OxA-14590	2836 +/- 32 BP	1028 - 931 BC	1108 - 912 BC	Carbonised residue, undecorated rim sherd



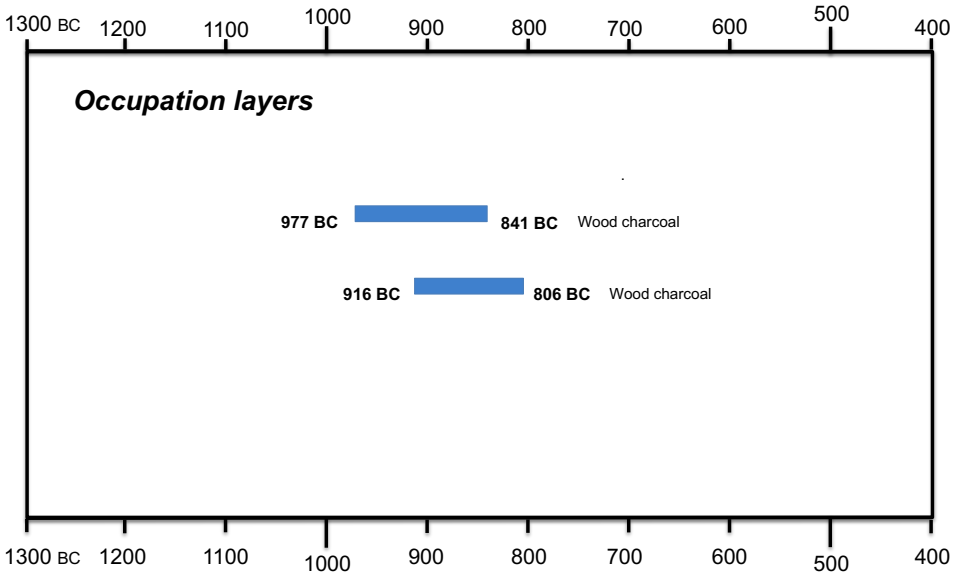
Tremough (Jones *et al.* 2015)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
SUERC-47288	2822 +/- 30 BP	1008 - 930 BC	1071 - 899 BC	Residue on pottery
SUERC-47299	2820 +/- 29 BP	1006 - 929 BC	1051 - 902 BC	Residue on pottery
SUERC-47289	2808 +/- 29 BC	997 - 924 BC	1047 - 896 BC	Residue on pottery
SUERC-47283	2782 +/- 29 BP	980 - 897 BC	1005 - 845 BC	Charcoal
SUERC-47990	2791 +/- 27 BP	977 - 906 BC	1011 - 848 BC	Residue on pottery
SUERC-47291	2766 +/- 29 BP	970 - 846 BC	995 - 835 BC	Residue on pottery
SUERC-47287	2747 +/- 26 BP	912 - 844 BC	972 - 827 BC	Residue on pottery



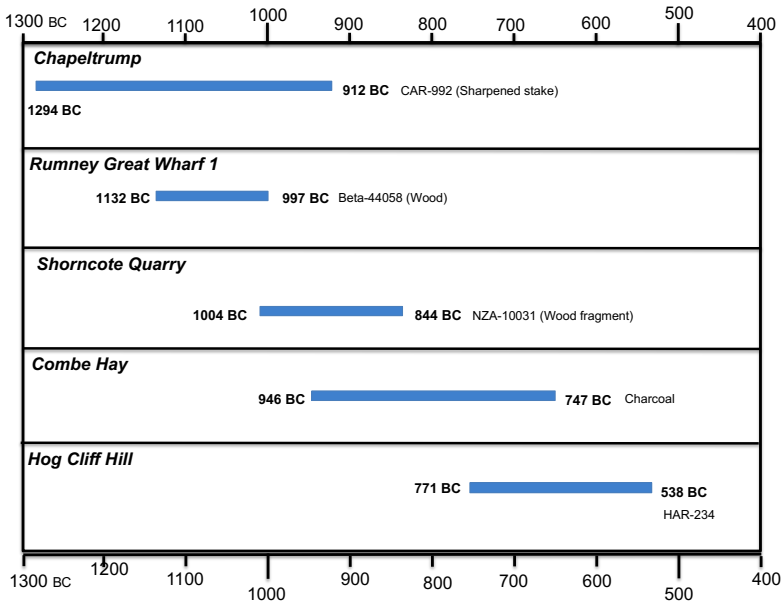
Stakepole Warren (Benson *et al.* 1990)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
	2779 +/- 70 BP	977 - 841 BC	1071 - 806 BC	Wood charcoal
	2710 +/- 64 BP	916 - 806 BC	1026 - 782 BC	Wood charcoal



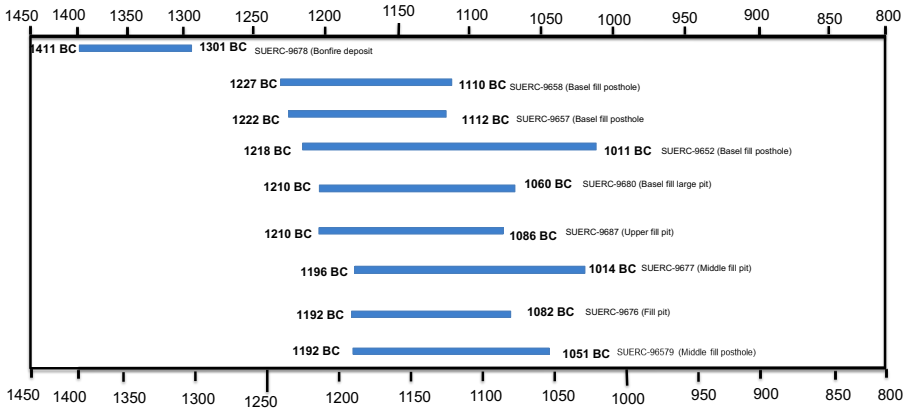
Single date sites (Whittle *et al.* 1989; Allen 1996; Brossler *et al.* 2002; Price and Watts 1980; Ellison and Rahtz 1987)

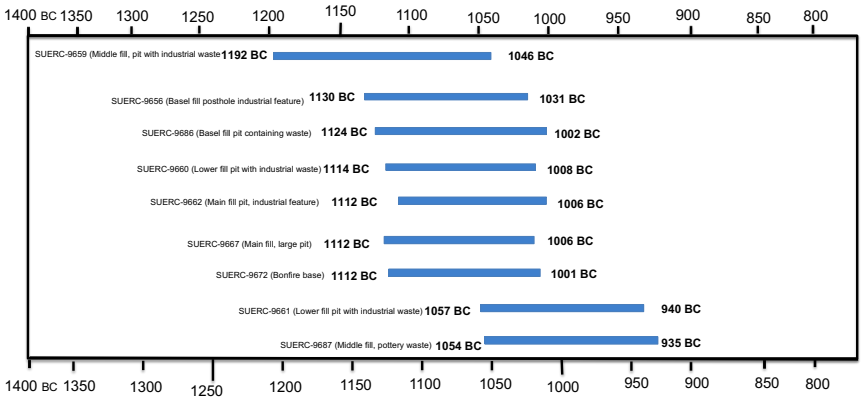
Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
Chapeltrump				
CAR-992	2910 +/- 70 BP	1294 - 912 BC	1369 +/- 912 BC	Sharpened stake
Rumney Great Wharf 1				
Beta-44058	2890 +/- 60 BP	1131 - 997 BC	1257 - 916 BC	Wood
Shorncote Quarry				
NZA-10031	2783 +/- 64 BP	1004 - 844 BC	1110 - 812 BC	Wood fragment
Combe Hay				
	2650+/- 120 BP	946 - 747 BC	1081 - 414 BC	Charcoal
Hog Cliff Hill				
HAR-234	2490 +/- 70 BP	771 - 538 BC	790 - 416 BC	

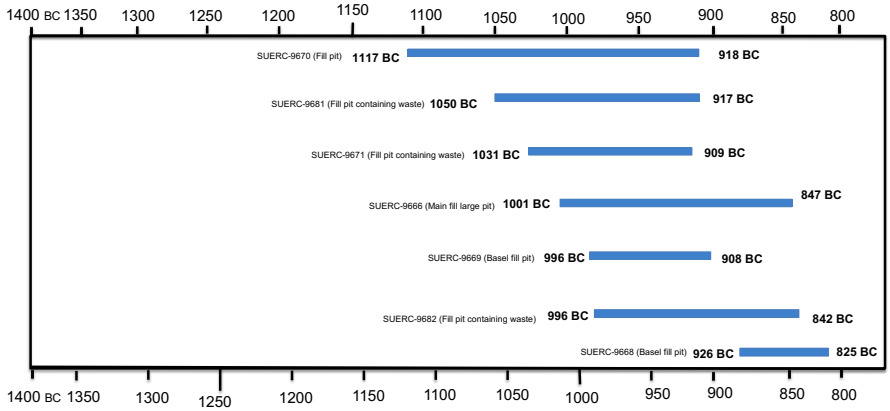


Tinney's Lane, Sherbourne (Best and Woodward 2012)

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
SUERC-9678	3090±35 BP	1411 - 1301 BC	1431 - 1264 BC	Bonfire deposit
SUERC-9658	2960±35 BP	1227 - 1110 BC	1276 - 1051 BC	Basel fill posthole industrial feature
SUERC-9657	2950±35 BP	1222 - 1112 BC	1264 - 1044 BC	Basel fill posthole industrial feature
SUERC-9680	2935±35 BP	1210 - 1060 BC	1257 - 1019 BC	Basel fill large pit
SUERC-9687	2935±35 BP	1210 - 1086 BC	1257 - 1019 BC	Upper fill pit containing pottery waste
SUERC-9677	2930±35 BP	1196 - 1057 BC	1226 - 1014 BC	Middle fill pit containing pottery waste
SUERC-9676	2925±35 BP	1192 - 1056 BC	1222 - 1013 BC	Fill pit
SUERC-9652	2920±35 BP	1192 - 1051 BC	1218 - 1011 BC	Basel fill posthole industrial feature
SUERC-9679	2920±35 BP	1192 - 1051 BC	1218 - 1011 BC	Middle fill pit backfilled industrial waste
SUERC-9659	2915±35 BP	1192 - 1046 BC	1216 - 1008 BC	Middle fill pit backfilled industrial waste
SUERC-9656	2910±35 BP	1130 - 1031 BC	1214 - 1006 BC	Basel fill posthole industrial feature
SUERC-9686	2885±40 BP	1124 - 1002 BC	1208 - 936 BC	Basel fill pit containing waste
SUERC-9660	2880±35 BP	1114 - 1008 BC	1194 - 936 BC	Lower fill pit backfilled industrial waste
SUERC-9662	2875±35 BP	1112 - 1006 BC	1192 - 931 BC	Main fill pit industrial feature
SUERC-9667	2875±35 BP	1112 - 1006 BC	1192 - 931 BC	Main fill large pit
SUERC-9672	2870±35 BP	1112 - 1001 BC	1190 - 927 BC	Bonfire base
SUERC-9661	2855±35 BP	1057 - 940 BC	1122 - 919 BC	Lower fill pit backfilled industrial waste
SUERC-9687	2850±35 BP	1054 - 935 BC	1117 - 918 BC	Middle fill pit containing pottery waste
SUERC-9670	2850±35 BP	1054 - 935 BC	1117 - 918 BC	Fill pit
SUERC-9681	2845±35 BP	1050 - 935 BC	1114 - 917 BC	Fill pit containing waste
SUERC-9671	2835±35 BP	1031 - 929 BC	1110 - 909 BC	Fill pit containing waste
SUERC-9666	2805±35 BP	1001 - 916 BC	1050 - 847 BC	Main fill large pit
SUERC-9669	2795±35 BP	996 - 908 BC	1027 - 842 BC	Basel fill pit
SUERC-9682	2795±35 BP	996 - 908 BC	1027 - 842 BC	Fill pit containing waste
SUERC-9668	2755±35 BP	926 - 840 BC	995 - 825 BC	Basel fill pit

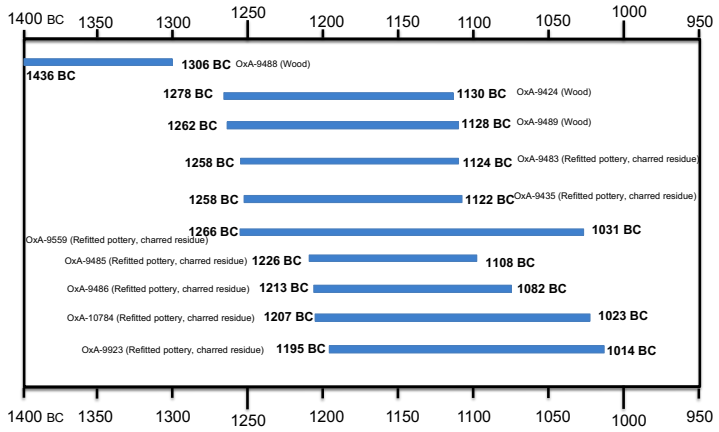

1450 1400 1350 1300 1250 1200 1150 1100 1050 1000 950 900 850 800
1411 BC 1301 BC SUERC-9678 (Bonfire deposit
1227 BC 1110 BC SUERC-9658 (Basel fill posthole)
1222 BC 1112 BC SUERC-9657 (Basel fill posthole
1218 BC 1011 BC SUERC-9652 (Basel fill posthole)
1210 BC 1060 BC SUERC-9680 (Basel fill large pit)
1210 BC 1086 BC SUERC-9687 (Upper fill pit)
1196 BC 1014 BC SUERC-9677 (Middle fill pit)
1192 BC 1082 BC SUERC-9676 (Fill pit)
1192 BC 1051 BC SUERC-96579 (Middle fill posthole)
1450 1400 1350 1300 1250 1200 1150 1100 1050 1000 950 900 850 800

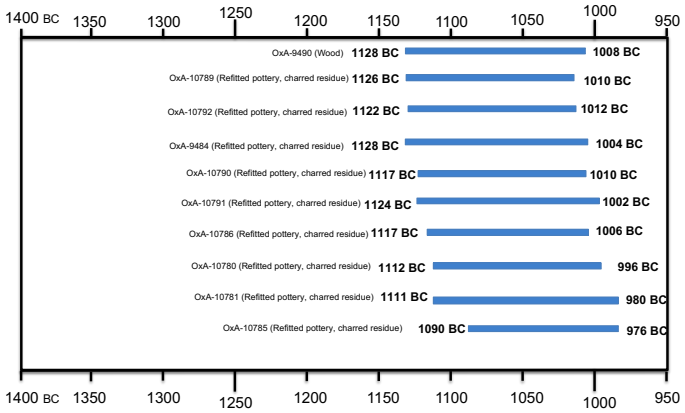

1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950 900 850 800
SUERC-9659 (Middle fill, pit with industrial waste 1192 BC 1046 BC
SUERC-9656 (Basel fill posthole industrial feature) 1130 BC 1031 BC
SUERC-9686 (Basel fill pit containing waste) 1124 BC 1002 BC
SUERC-9660 (Lower fill pit with industrial waste) 1114 BC 1008 BC
SUERC-9662 (Main fill pit, industrial feature) 1112 BC 1006 BC
SUERC-9667 (Main fill, large pit) 1112 BC 1006 BC
SUERC-9672 (Bonfire base) 1112 BC 1001 BC
SUERC-9661 (Lower fill pit with industrial waste) 1057 BC 940 BC
SUERC-9687 (Middle fill, pottery waste) 1054 BC 935 BC
1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950 900 850 800

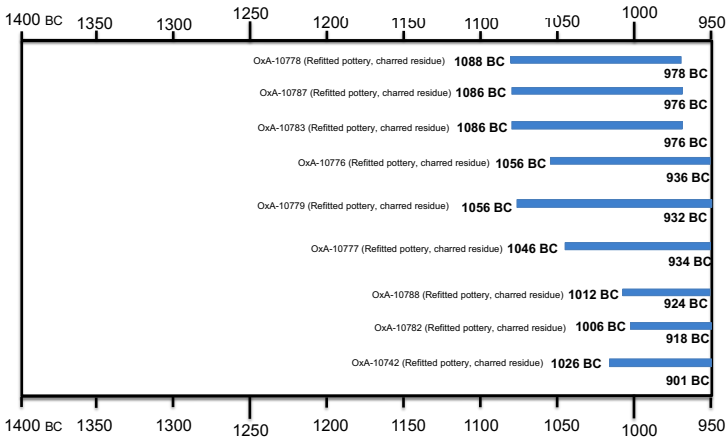

1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950 900 850 800
SUERC-9670 (Fill pit) 1117 BC 918 BC
SUERC-9681 (Fill pit containing waste) 1050 BC 917 BC
SUERC-9671 (Fill pit containing waste) 1031 BC 909 BC
SUERC-9666 (Main fill large pit) 1001 BC 847 BC
SUERC-9669 (Basel fill pit) 996 BC 908 BC
SUERC-9682 (Fill pit containing waste) 996 BC 842 BC
SUERC-9668 (Basel fill pit) 926 BC 825 BC
1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950 900 850 800

Huntsman's Quarry (Jackson 2015; Jackson and Napthan 1998.

Laboratory number	Date	Calibrated range at 1 sigma	Calibrated range at 2 sigma	Context
OxA-9488	3122±39 BP	1436 - 1306 BC	1496 - 1281 BC	Wood
OxA-9424	2992±36 BP	1278 - 1130 BC	1387 - 1111 BC	Wood
OxA-9489	2980±40 BP	1263 - 1128 BC	1375 - 1055 BC	Wood
OxA9483	2970±40 BP	1258 - 1124 BC	1371 - 1051 BC	Refitted pottery, Charred residue
OxA-9435	2968±39 BP	1258 - 1122 BC	1369 - 1050 BC	Refitted pottery, Charred residue
OxA-9559	2950±80 BP	1266 - 1031 BC	1395 - 936 BC	Refitted pottery, Charred residue
OxA-9485	2950±40 BP		1268 - 1022 BC	Refitted pottery, Charred residue
OxA-9486	2938±40 BP	1213 - 1082 BC	1260 - 1016 BC	Refitted pottery, Charred residue
OxA-10784	2916±58 BP	1207 - 1023 BC	1272 - 932 BC	Refitted pottery, Charred residue
OxA-9923	2910±60 BP	1196 - 1014 BC	1266 - 926 BC	Refitted pottery, Charred residue
OxA-9490	2895±45 BP	1128 - 1008 BC	1218 - 937 BC	Wood
OxA-10789	2894±37 BP	1126 - 1010 BC	1210 - 976 BC	Refitted pottery, Charred residue
OxA-10792	2891±36 BP	1122 - 1012 BC	1208 - 976 BC	Refitted pottery, Charred residue
OxA-9484	2890±45 BP	1128 - 1004 BC	1213 - 936 BC	Refitted pottery, Charred residue
OxA-10790	2886±36 BP	1117 - 1010 BC	1207 - 940 BC	Refitted pottery, Charred residue
OxA-10791	2885±40 BP	1124 - 1002 BC	1208 - 936 BC	Refitted pottery, Charred residue
OxA-10786	2882±37 BP	1117 - 1006 BC	1196 - 935 BC	Refitted pottery, Charred residue
OxA-10780	2868±37 BP	1112 - 996 BC	1191 - 923 BC	Refitted pottery, Charred residue
OxA-10781	2865±40 BP	1111 - 980 BC	1192 - 918 BC	Refitted pottery, Charred residue
OxA-10785	2862±37 BP	1090 - 976 BC	1188 - 919 BC	Refitted pottery, Charred residue
OxA-10778	2861±37 BP	1088 - 976 BC	1188 - 918 BC	Refitted pottery, Charred residue
OxA-10787	2860±40 BP	1086 - 976 BC	1189 - 916 BC	Refitted pottery, Charred residue
OxA-10783	2860±38 BP	1086 - 976 BC	1188 - 917 BC	Refitted pottery, Charred residue
OxA-10776	2852±36 BP	1056 - 936 BC	1121 - 916 BC	Refitted pottery, Charred residue
OxA-10779	2850±37 BP	1056 - 932 BC	1121 - 913 BC	Refitted pottery, Charred residue
OxA-10777	2840±37 BP	1046 - 934 BC	1114 - 911 BC	Refitted pottery, Charred residue
OxA-10788	2823±35 BP	1012 - 924 BC	1107 - 899 BC	Refitted pottery, Charred residue
OxA-10782	2812±37 BP	1006 - 918 BC	1071 - 846 BC	Refitted pottery, Charred residue
OxA-10842	2810±50 BP	1026 - 901 BC	1110 - 840 BC	Refitted pottery, Charred residue


1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950
1306 BC OxA-9488 (Wood)
1436 BC
1278 BC 1130 BC OxA-9424 (Wood)
1262 BC 1128 BC OxA-9489 (Wood)
1258 BC 1124 BC OxA-9483 (Refitted pottery, charred residue)
1258 BC 1122 BC OxA-9435 (Refitted pottery, charred residue)
1266 BC 1031 BC
OxA-9559 (Refitted pottery, charred residue)
OxA-9485 (Refitted pottery, charred residue) 1226 BC 1108 BC
OxA-9486 (Refitted pottery, charred residue) 1213 BC 1082 BC
OxA-10784 (Refitted pottery, charred residue) 1207 BC 1023 BC
OxA-9923 (Refitted pottery, charred residue) 1195 BC 1014 BC
1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950

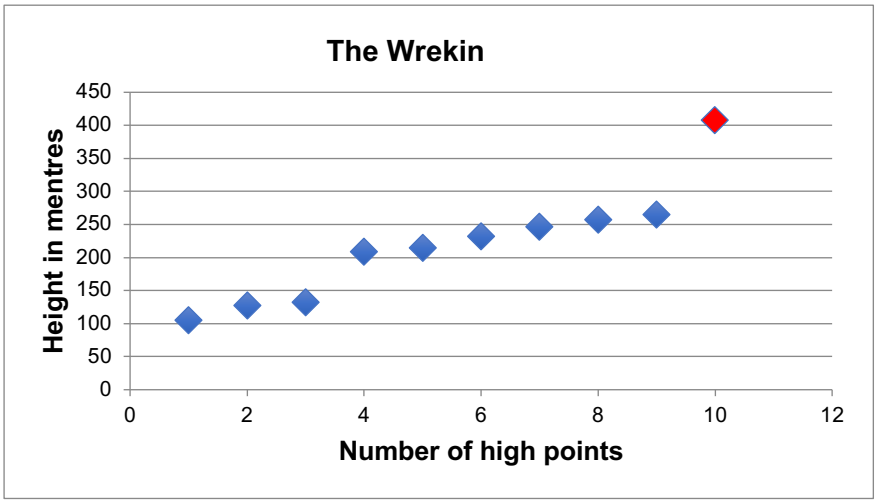

1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950
OxA-9490 (Wood) 1128 BC 1008 BC
OxA-10789 (Refitted pottery, charred residue) 1126 BC 1010 BC
OxA-10792 (Refitted pottery, charred residue) 1122 BC 1012 BC
OxA-9484 (Refitted pottery, charred residue) 1128 BC 1004 BC
OxA-10790 (Refitted pottery, charred residue) 1117 BC 1010 BC
OxA-10791 (Refitted pottery, charred residue) 1124 BC 1002 BC
OxA-10786 (Refitted pottery, charred residue) 1117 BC 1006 BC
OxA-10780 (Refitted pottery, charred residue) 1112 BC 996 BC
OxA-10781 (Refitted pottery, charred residue) 1111 BC 980 BC
OxA-10785 (Refitted pottery, charred residue) 1090 BC 976 BC
1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950

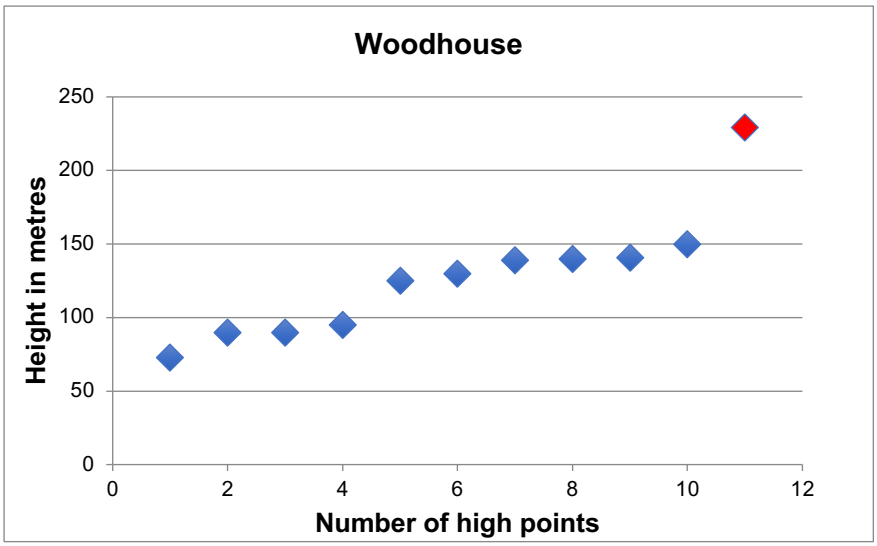

1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950
OxA-10778 (Refitted pottery, charred residue) 1088 BC
978 BC
OxA-10787 (Refitted pottery, charred residue) 1086 BC
976 BC
OxA-10783 (Refitted pottery, charred residue) 1086 BC
976 BC
OxA-10776 (Refitted pottery, charred residue) 1056 BC
936 BC
OxA-10779 (Refitted pottery, charred residue) 1056 BC
932 BC
OxA-10777 (Refitted pottery, charred residue) 1046 BC
934 BC
OxA-10788 (Refitted pottery, charred residue) 1012 BC
924 BC
OxA-10782 (Refitted pottery, charred residue) 1006 BC
918 BC
OxA-10742 (Refitted pottery, charred residue) 1026 BC
901 BC
1400 BC 1350 1300 1250 1200 1150 1100 1050 1000 950

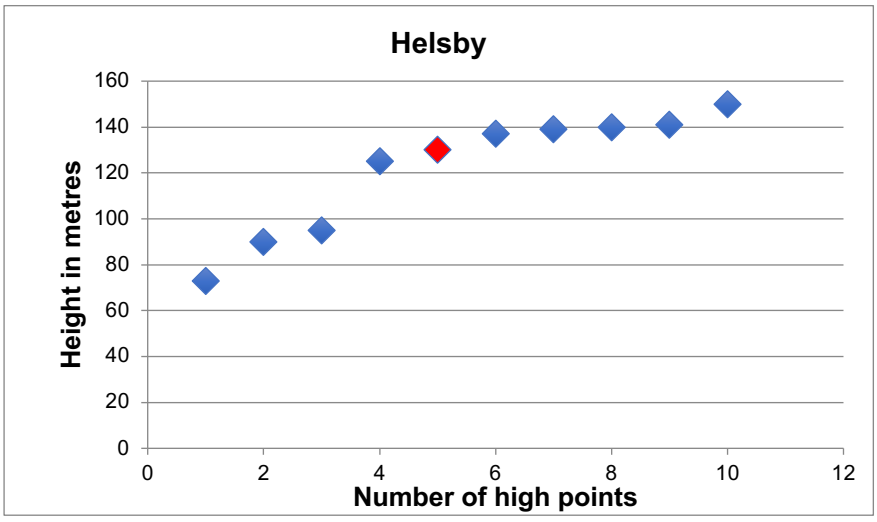
APPENDIX 3

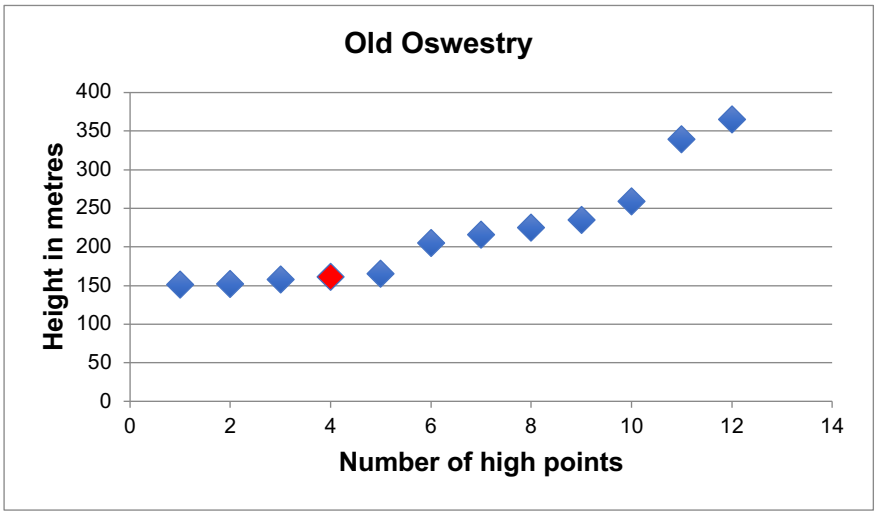
AOD GRAPHS FOR ALL SITES

WALES/MARCHES





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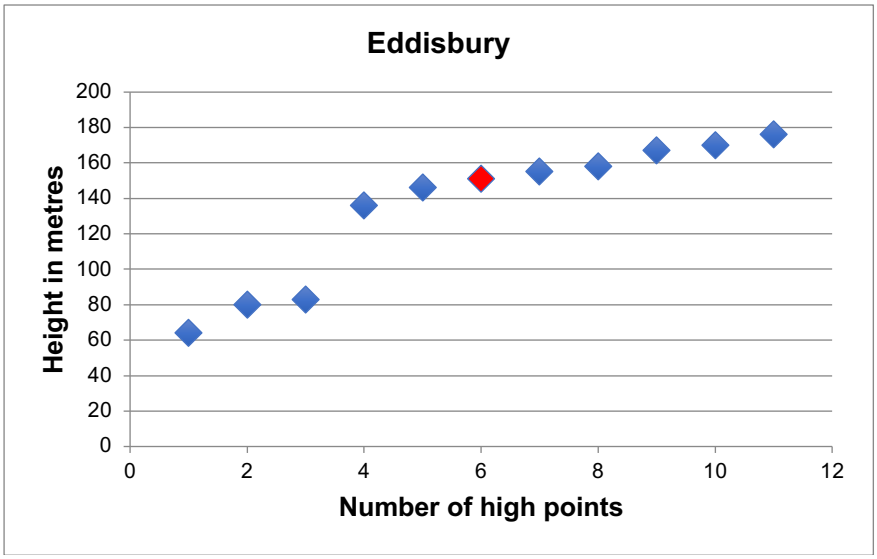
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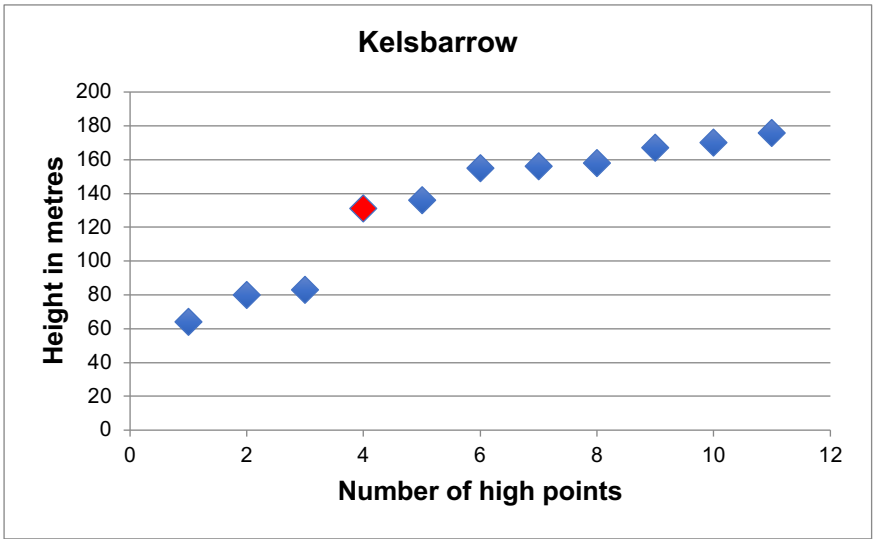
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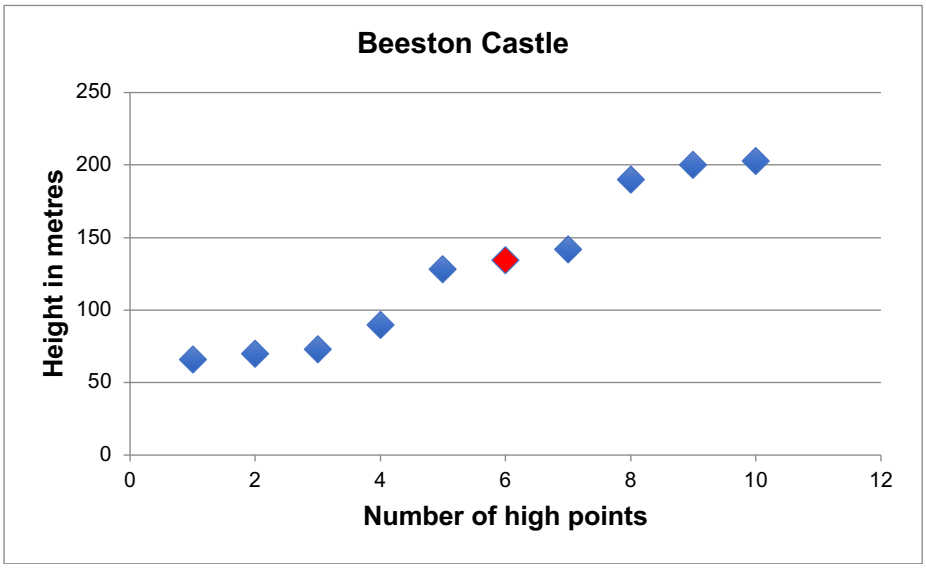
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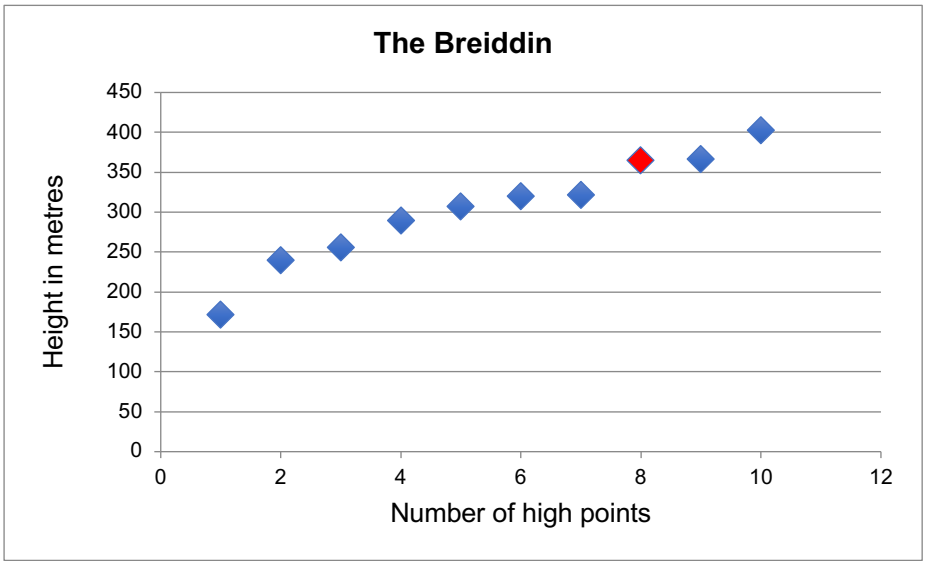
Number of high points


The Breiddin
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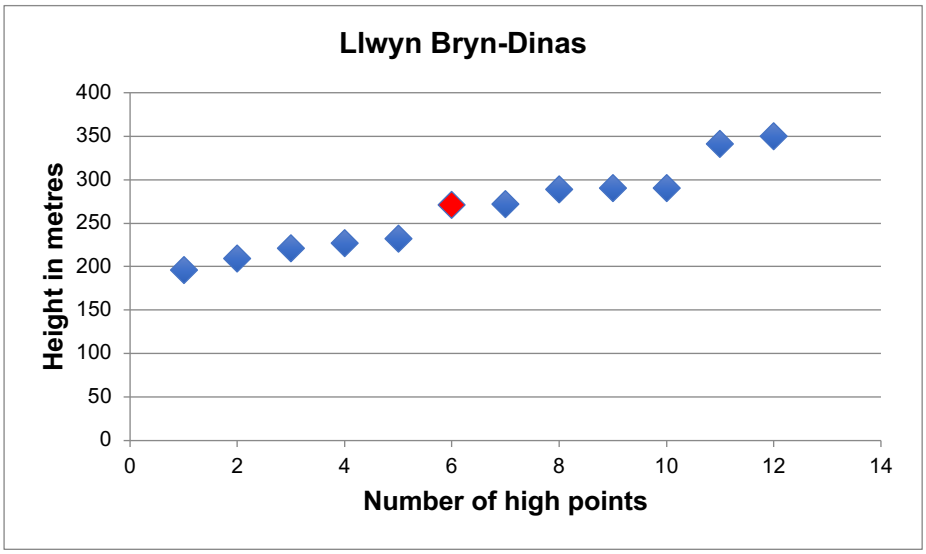
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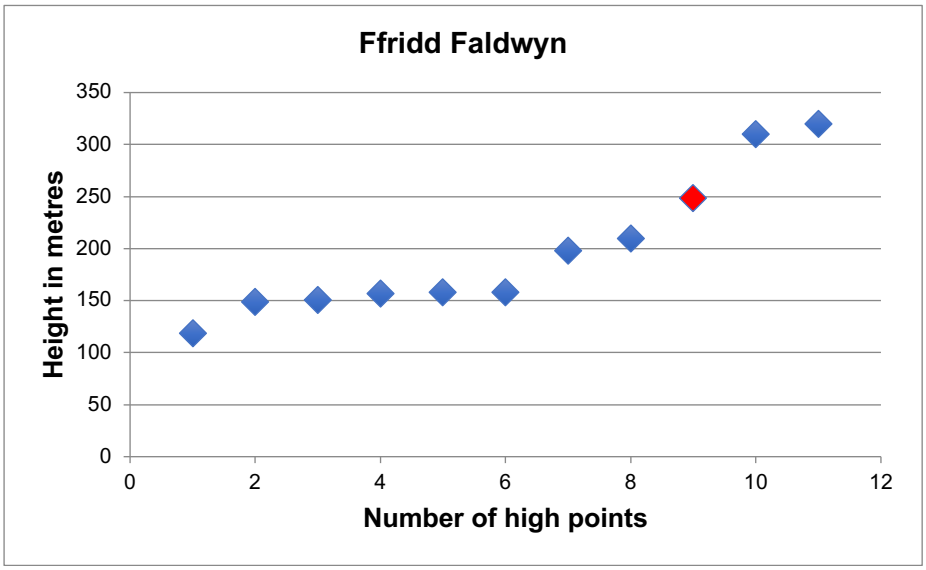
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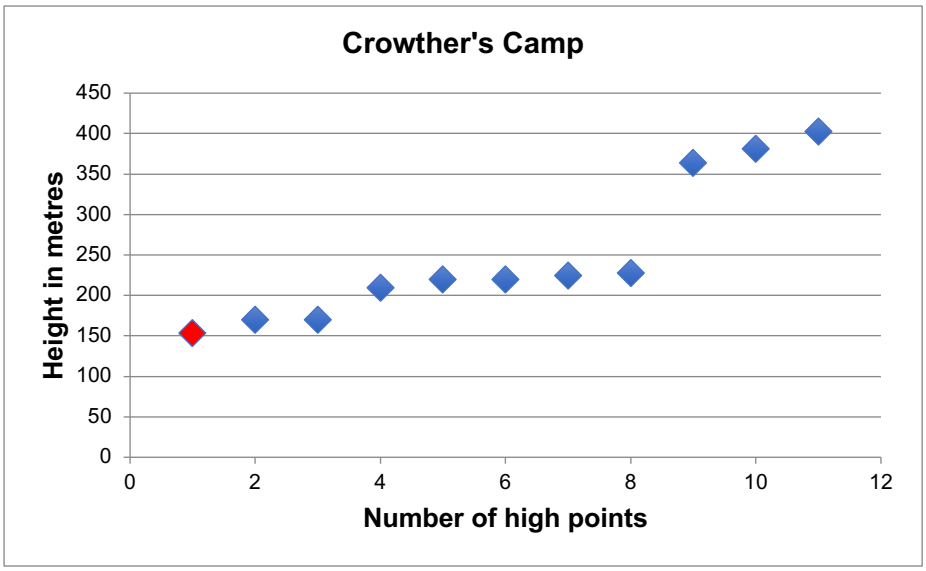
Number of high points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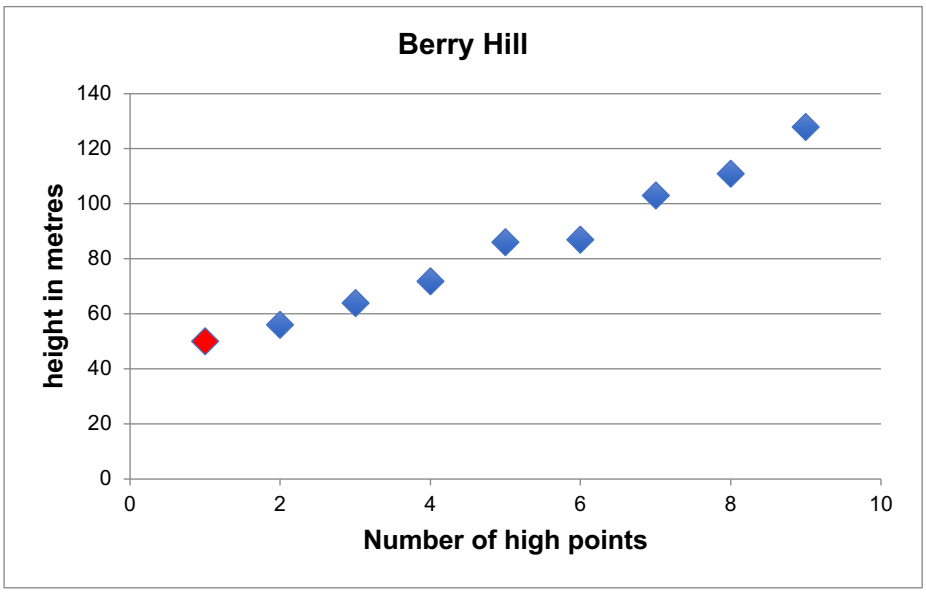
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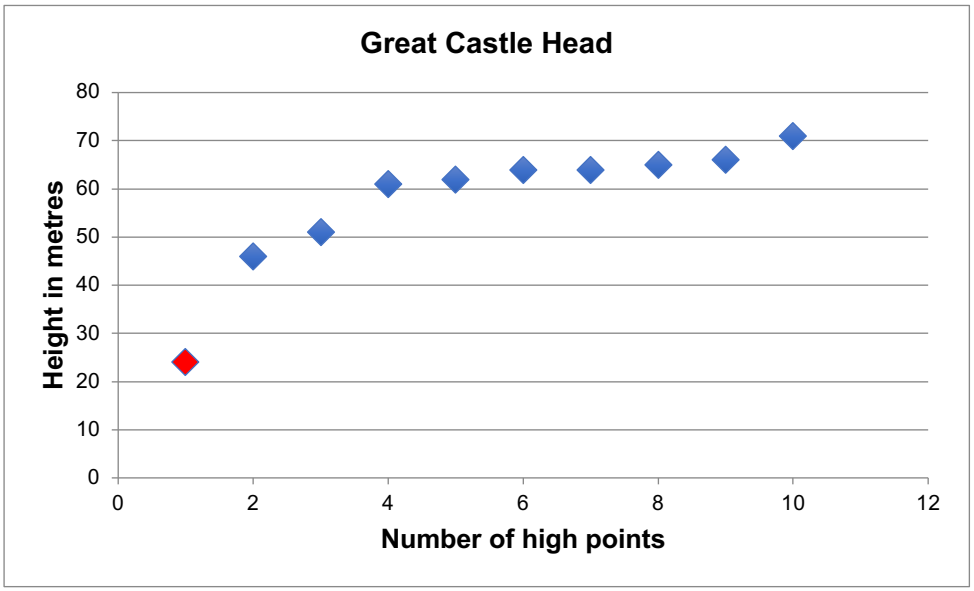
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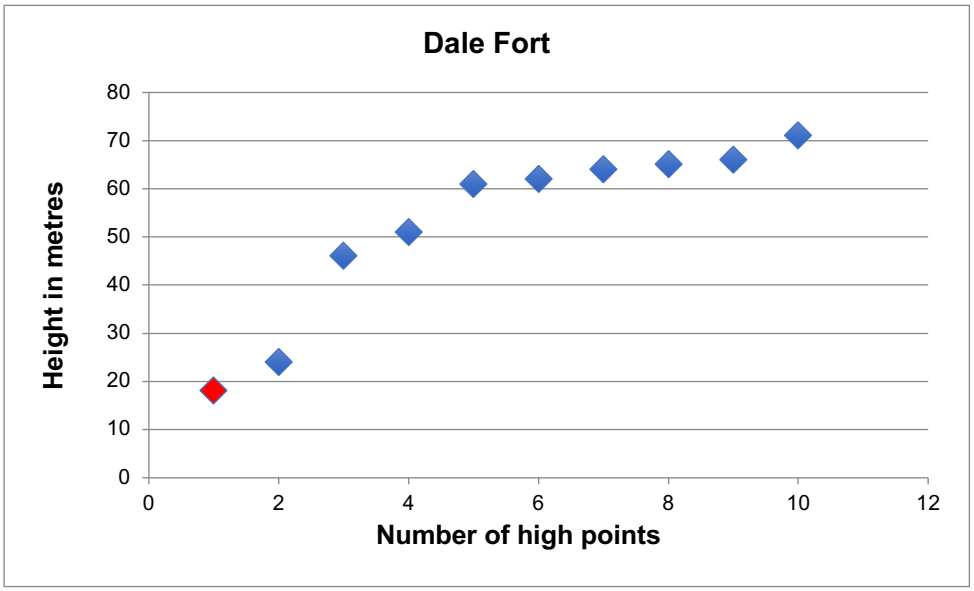
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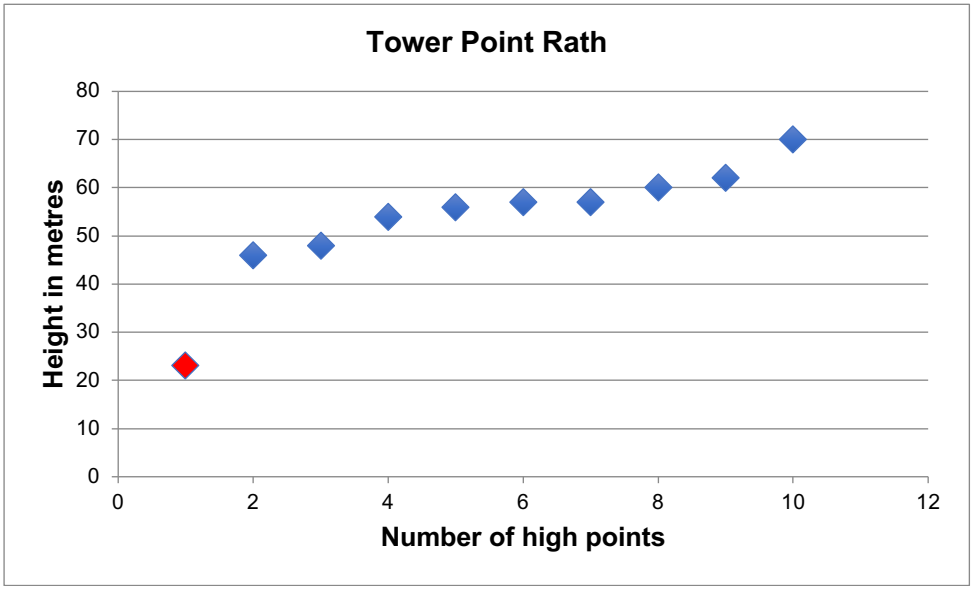
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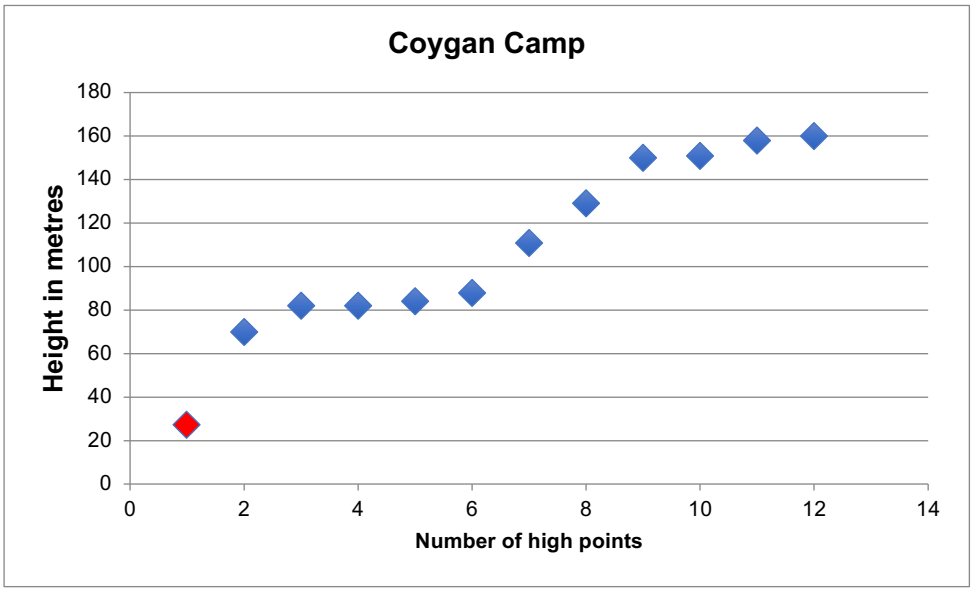
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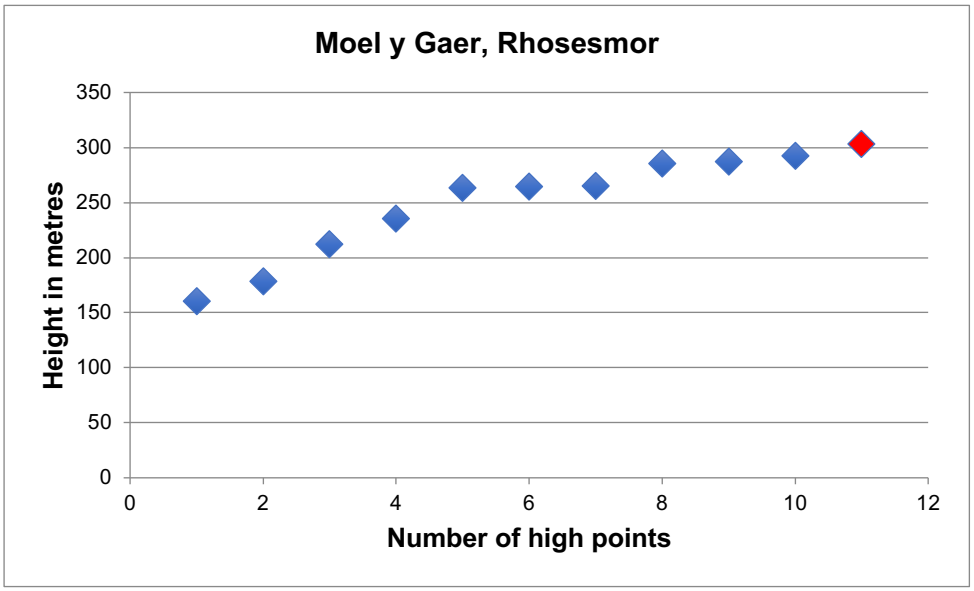
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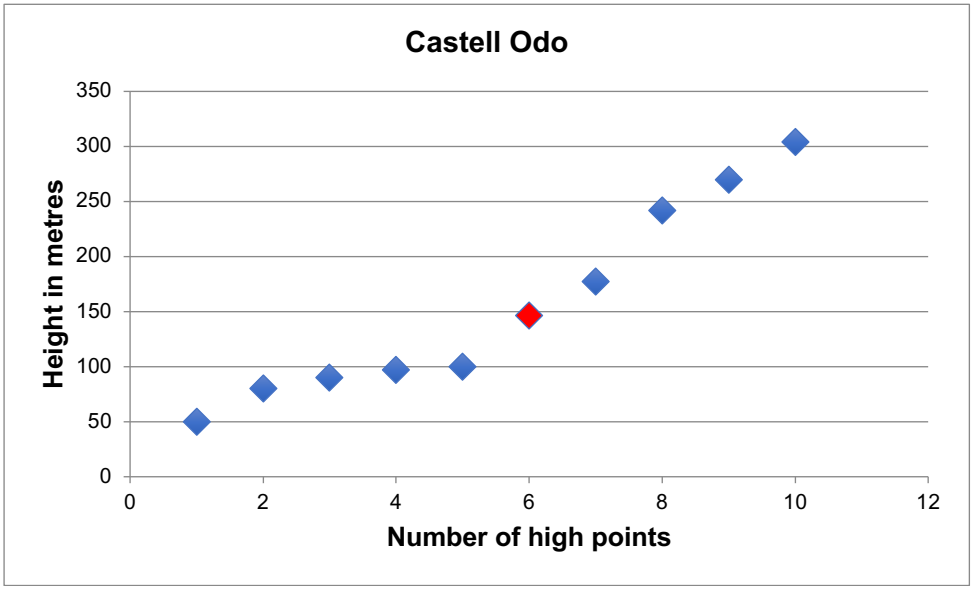
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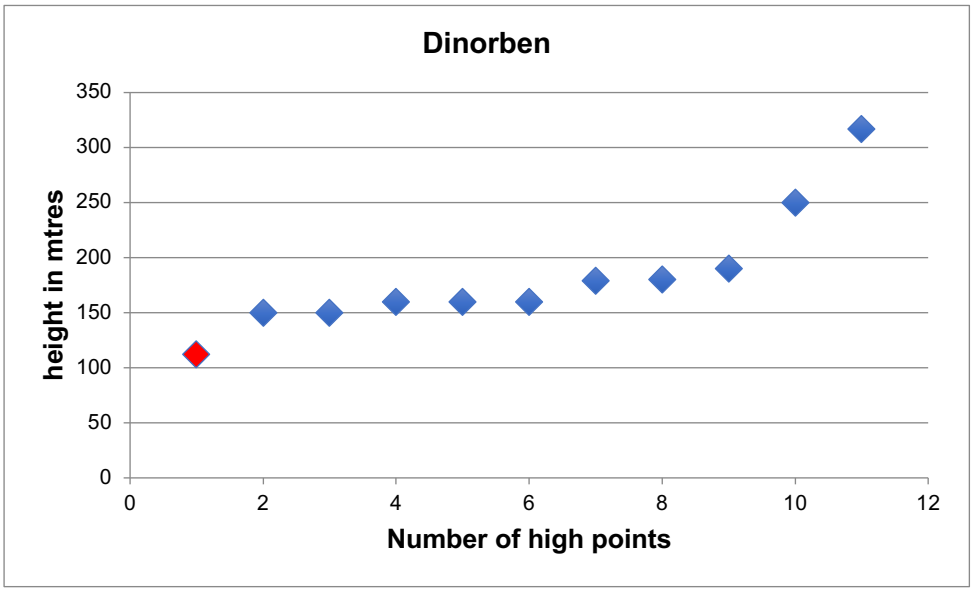
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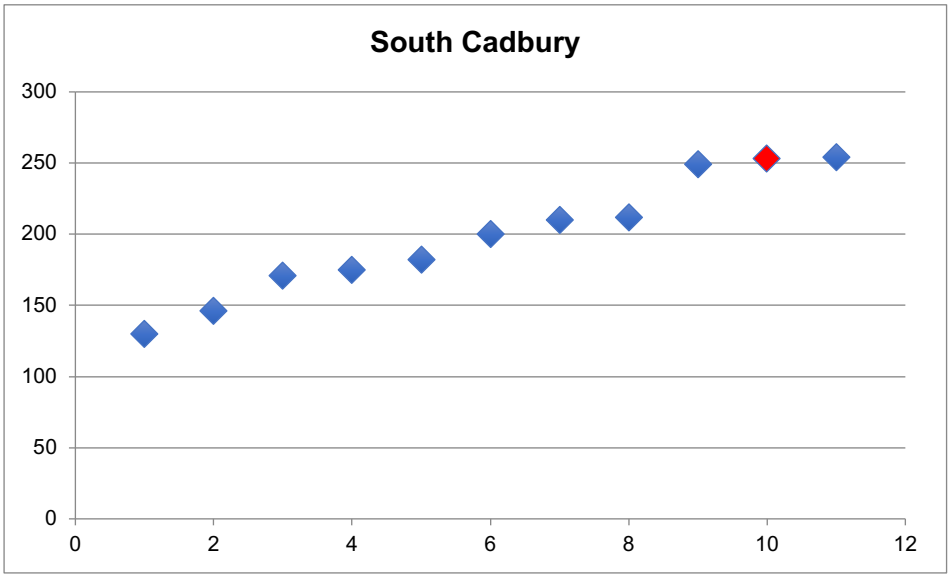
Number of high points

SW ENGLAND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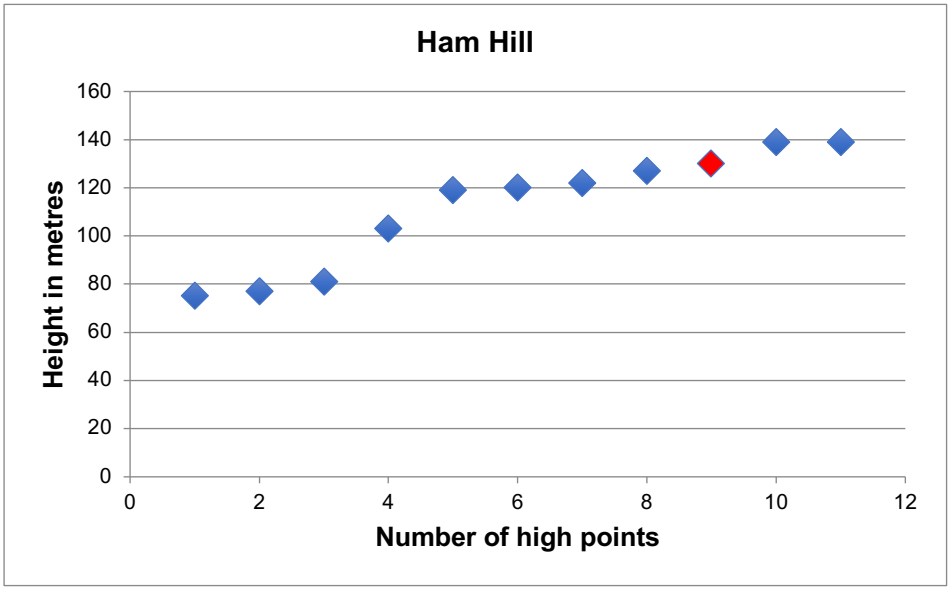
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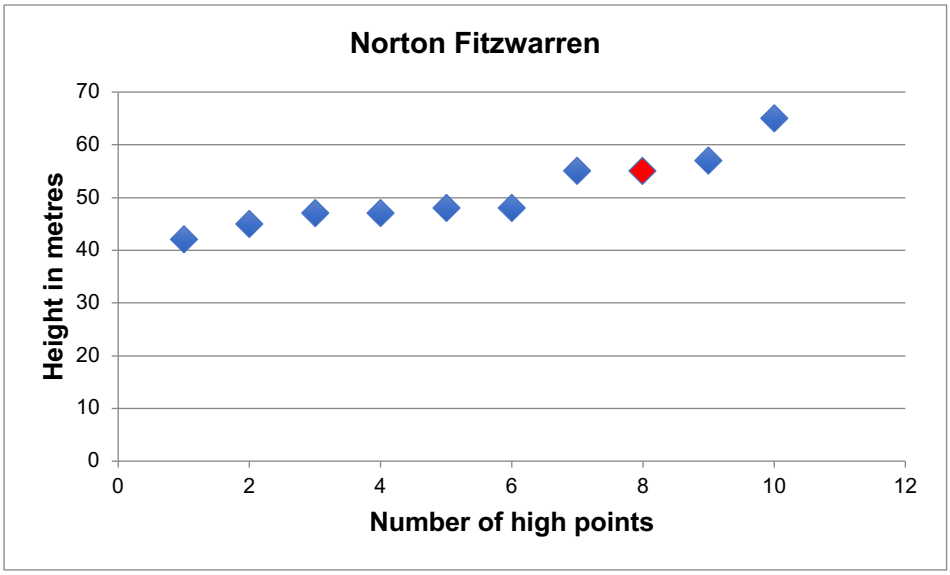
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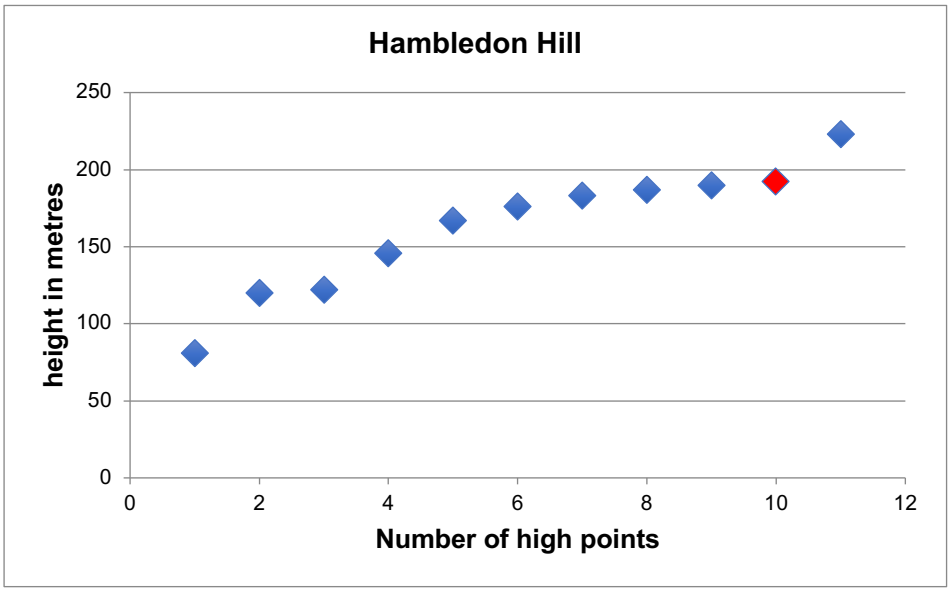
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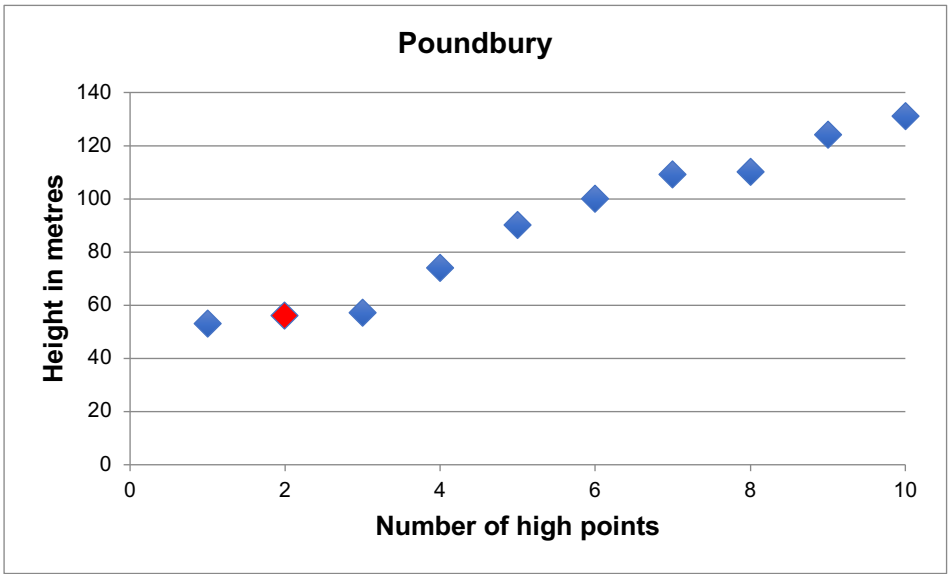
Number of high points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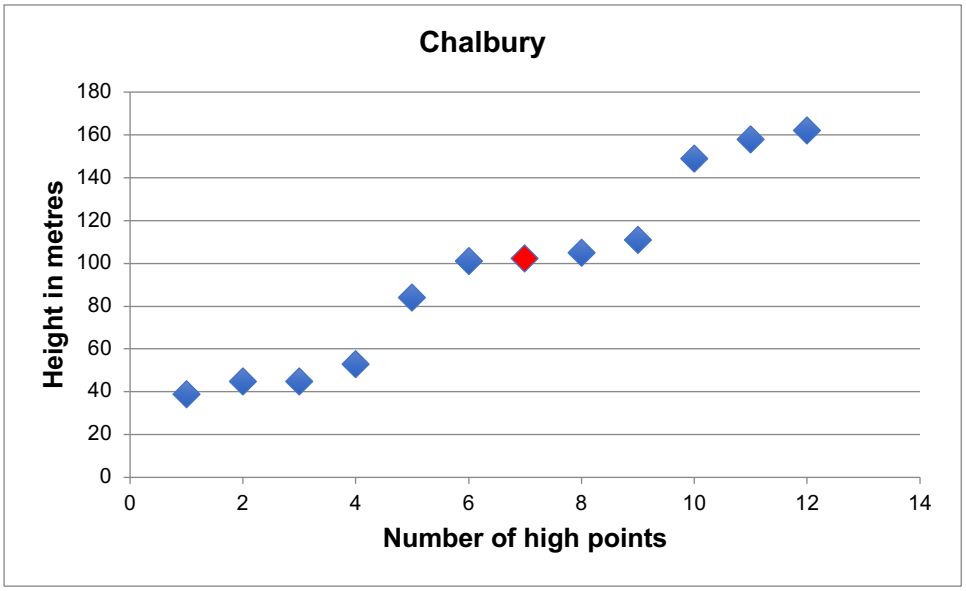
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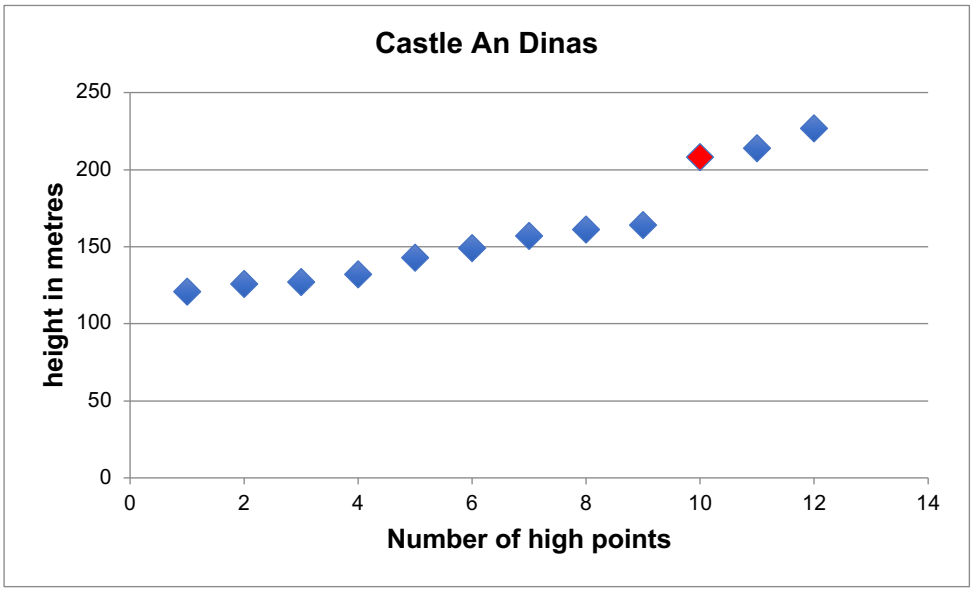
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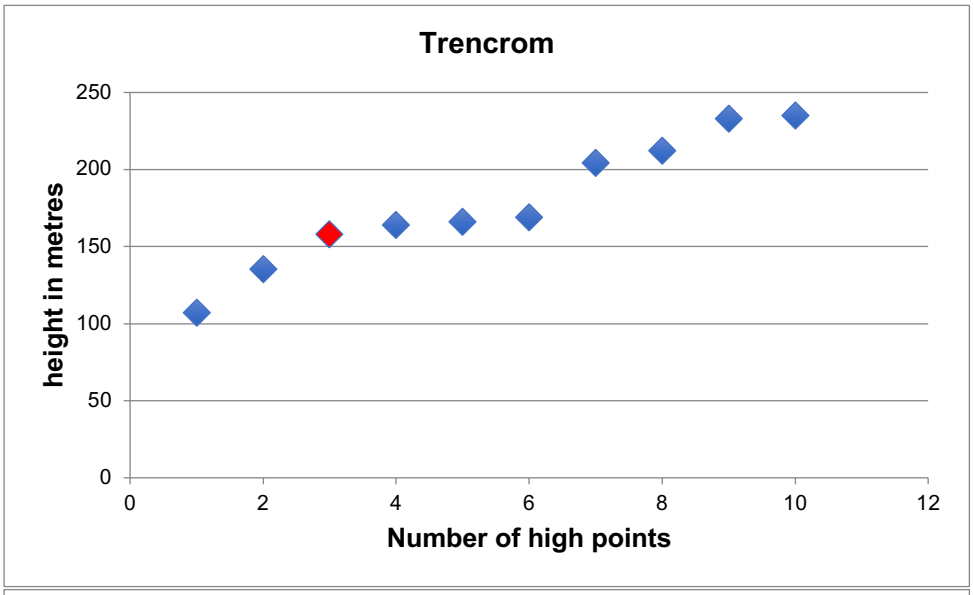
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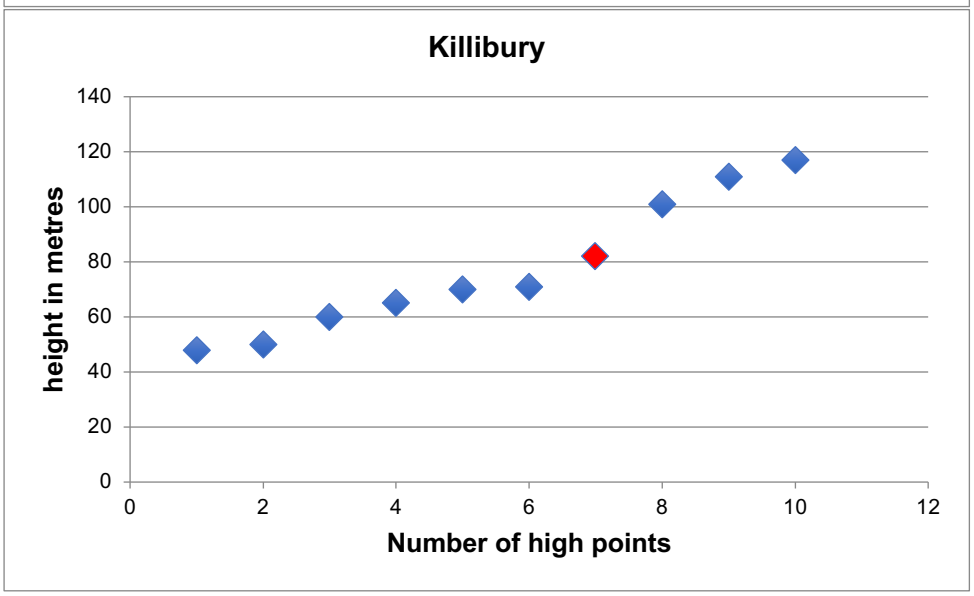
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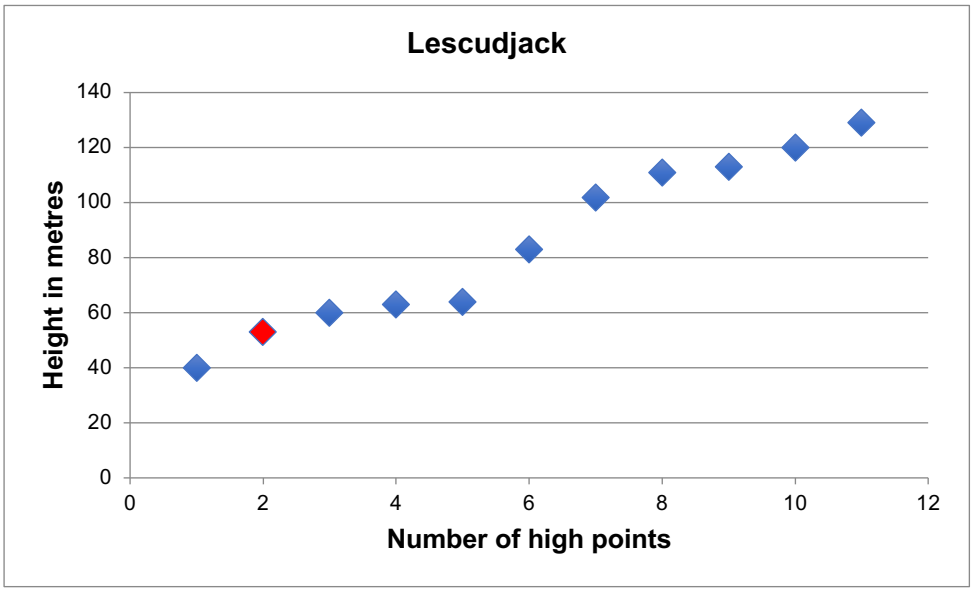
Number of high points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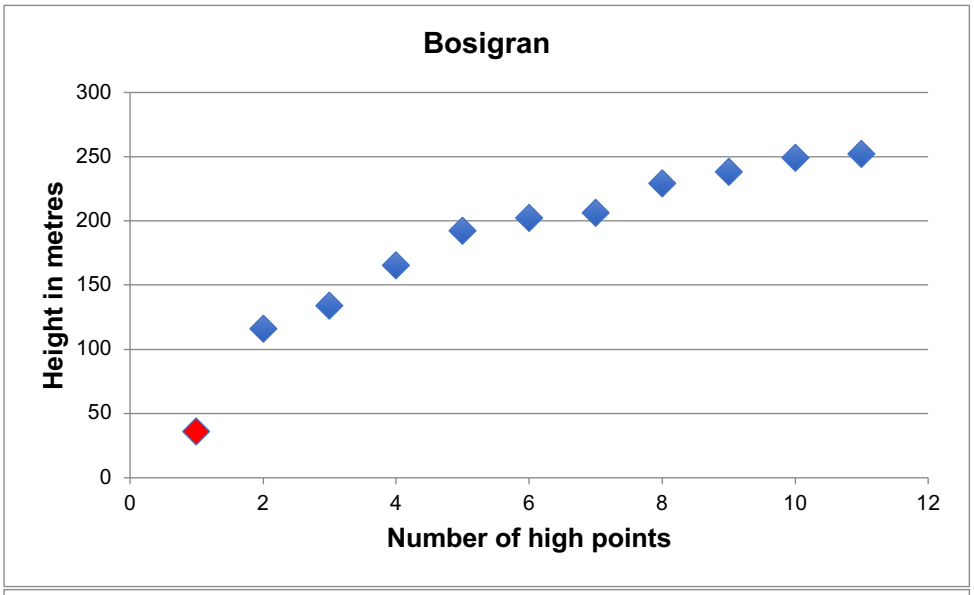
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Height in metres
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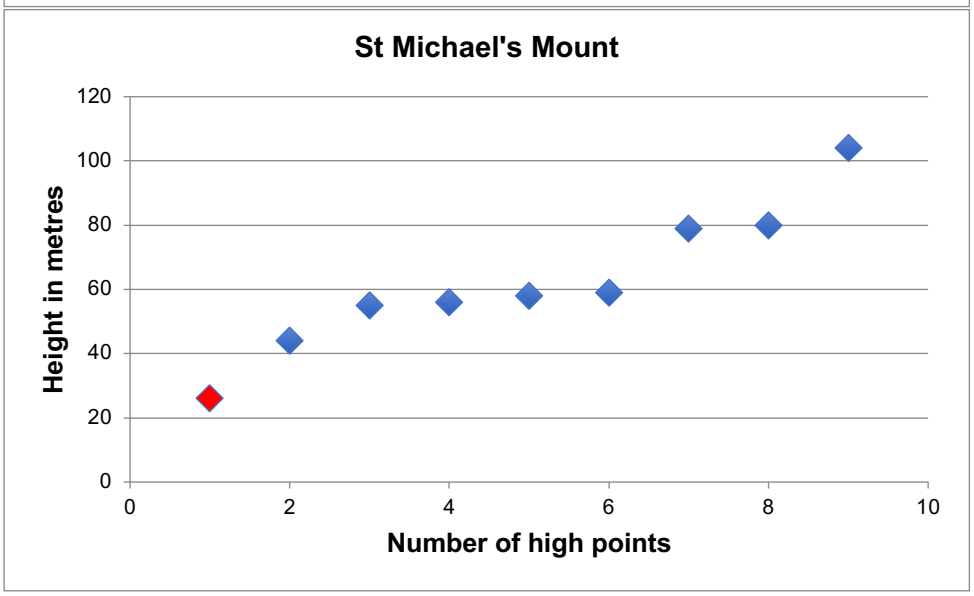
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Height in metres
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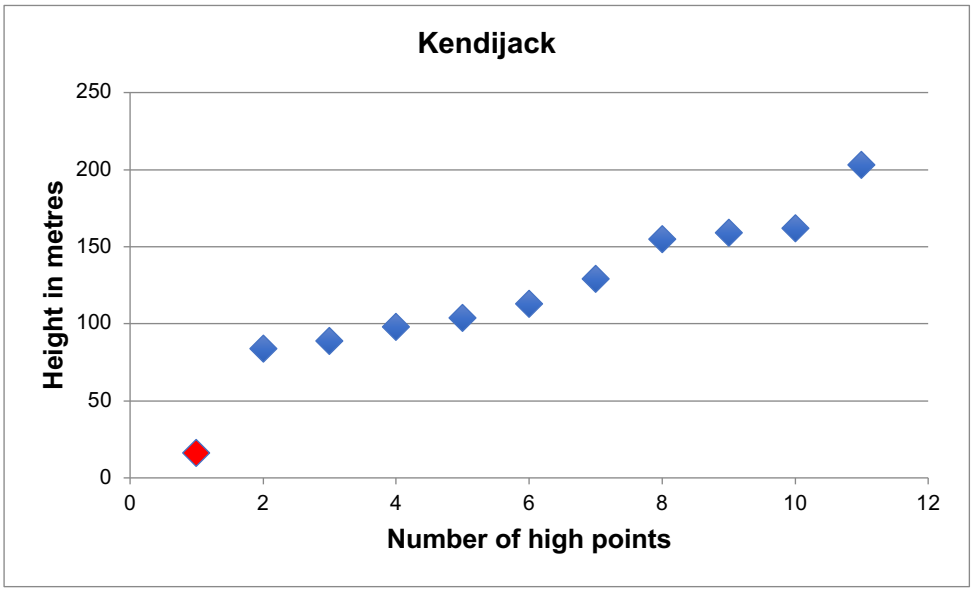
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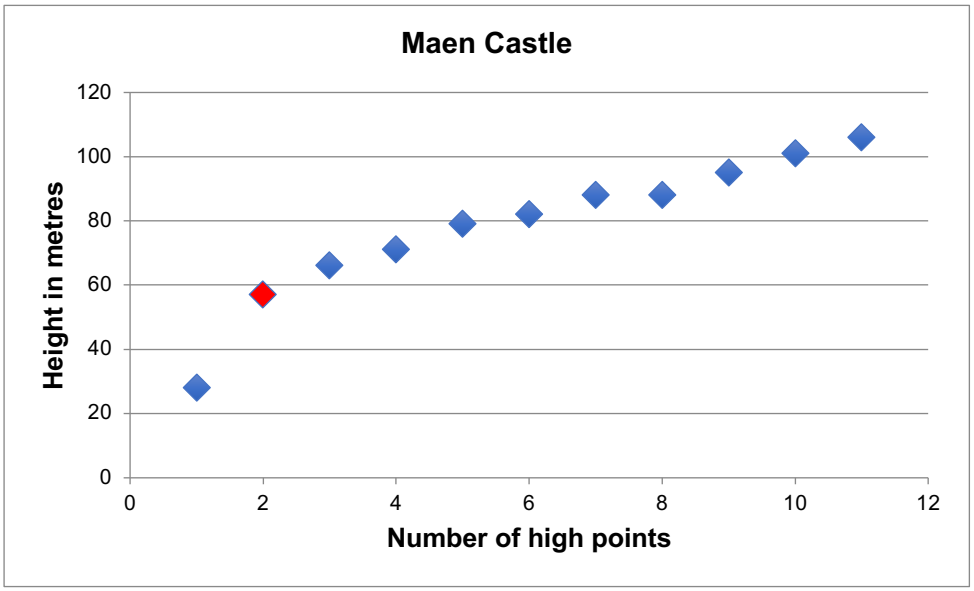
Maen Castle
Height in metres
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Number of high points

APPENDIX 4

CERAMIC ASSEMBLAGES

Ceramic assemblages from hilltop sites

Site	Evidence	Reference
Wales/ Marches		
Beeston Castle, Cheshire	1100 separate sherds, only 2 complete vessels reassembled, with rim sherds from barrel shaped jars.	Ellis 1993, 71.
Castell Odo, Gwynnedd	244 sherds, mainly large, coarse jars, with some used for cooking (encrustation of charcoal).	Alcock 1960
Coygan Camp, Carmarthenshire	4 sherds from 2 pots, from under outer bank and south entrance.	Wainwright 1967, 21
Darren Camp, Ceredigion	Single pottery sherd, LBA type, lower layers of collapsed hillfort walls.	Driver 1996 Timberlake and Driver 2005
Dinorben, Flintshire	1956 excavation - Several sherds from pre-rampart layers found in four of the structures and various locations in interior. 1969 excavation – large fragment from base of large jar 80mm x 70 mm thick, coarse ware. Diameter of base at least 200mm. Several other fragments, probably from same jar, sooty encrustations.	Gardner and Savory 1967 Savory 1971a, 1971b
Llwyn Bryn-Dinas, Powys	Single pottery sherd, probably LBA type, in deposit which had a radiocarbon date of 800±70 cal BC in pre-rampart soil. Separate deposit had 10 sherds.	Musson *et al.* 1992
The Breiddin, Powys	Large pottery assemblage from multiple locations throughout site (occupation layer behind rampart; junction of Iron Age rampart and Bronze Age occupation layer; core of Bronze Age rampart). Types found include: short neck situlate jars, globular or barrel shaped pots, open bowls, slack profiled jar of finer fabric.	Musson 1991
The Wrekin, Shropshire	Small assemblage of LBA domestic pots spread widely across site, and most structures, including rim sherds from slack shouldered or situla type necked jar.	Stanford 1984
SW England		
South Cadbury, Somerset	227 diagnostic sherds of LBA pottery. Dominated by large, coarse jar, and flat rimmed jars.	Woodward 2000
Chalbury, Dorset	4 sherds of Deveral-Rimbury type similar to those found at nearby Rimbury cemetery. One coarse sherd of yellow LBA pottery and several sherds of shiny black pottery, either LBA or vEIA.	Whitley 1943
Ham Hill, Somerset	121 sherds of LBA pottery from 6 – post structure, 64 of which came from a large, coarse vessel, also a partial profile of a barrel shaped vessel with externally rounded rim. Rectangular enclosure – LBA sherds constituting two jars and a small vessel. 41 residual LBA sherds in Iron Age structure.	Brittain *et al.* 2012, 59. Brudenell 2013, 43.

Hambledon Hill, Dorset	No LBA features, but 1kg of LBA pottery in association with animal bones on west side of Stapleton Enclosure. 207 sherds, including those from a furrowed bowl from the Stapleton Spur. 11 sherds of LBA pottery on Hillfort Spur.	Mercer and Healy 2008
Killibury, Cornwall	One large sherd from base soil layer similar to local Travisker pottery (used 1000-600 BC).	Miles *at al*. 1977, 107.
Norton Fitzwarren, Somerset	341 sherds, including 2 jars in soil above a pit containing metalworking deposits.	Woodward 1989
Poundbury Dorset	A number of ceramic sherds found in 'detritus' layer.	Green 1987
St Michael's Mount, Cornwall	19 LBA sherds from various locations on Mount.	Herring *et al.* 2000.
Trencrom, Cornwall	2 sherds of LBA pottery in SW rampart.	Herring 1999, 30.

Ceramic assemblages from non-hilltop sites

Site	Evidence	Reference
Brean Down, Somerset	Large LBA Post Deveral-Rimbury plainware pottery assemblage (over 2000 sherds). Very little decoration, mainly jars and angular bowls.	Bell 2015
Cabot Park, Bristol	Simple, undecorated sherds of LBA pottery	Locock 2001.
Caldicot Castle Lake, Gwent	Several sherds of LBA pottery with incised chevrons and horizontal lines.	Nayling 1993, 79
Chapeltrump, Gwent	9 sherds LBA pottery.	Cleal 1992
Coburg Road, Dorchester, Dorset	227 sherds, 2.3 kg LBA Post Deveral-Rimbury pottery. Mainly large, convex bodied vessels, bowls and jars.	Whittle *et al.* 1989, 2007
Combe Hay, Somerset	500 sherds of Post Deveral-Rimbury tradition pottery.	Price and Watts 1980, 22.
Dainton, Cornwall	Over 400 sherds, broadly post Deveral-Rimbury plainware tradition, mainly from bowls/jars.	Silvester 1980, 107
Eldon's Seat, Dorset	LBA vessels comprising of 9 vessels.	Cunliffe and Phillipson 1968, 208.
Gwithian, Cornwall	LBA ceramic assemblage a distinctive version of Travisker style, forms simple and generally straight-sided. Probably on-site production. Date range 1380-900 cal BC.	Nowakowski *et al.* 2007.
Hog Cliff Hill, Dorset	Small LBA assemblage, sherds mainly from large, probably s-profiled jars and a bowl.	Ellison and Rahtz 1987, 249
Huntsman's Quarry, Worcestershire	3927 sherds of LBA pottery, remarkably large variety of forms.	Jackson and Napthan 1998, 63
Rumney Great Wharf, Gwent	General LBA plain ware pottery assemblage.	Allen 1996, 10
Scarcewater, Cornwall	44 sherds of LBA Plainware, associated with two radiocarbon dates of 1120-920 cal BC and 1130-920 cal BC. Assemblage included sherds of two straight-walled vessels and a curved sided vessel.	Jones and Taylor 2010, 107
Sharpstones Hills, Shropshire	1 rim sherd and 14 body LBA sherds, possibly a shouldered jar.	Barker *et al.* 1991, 36
Shorncote Quarry, Gloucestershire	In total 1,829 sherds of LBA pottery from 3 separate excavations. LBA Plainware from very beginning of decorated phase, (9^{th} -8^{th} century BC), dominated by jars.	Hearne and Heaton 1994, 35.
Stackpole Warren, Pembrokeshire	26 LBA vessels, where reconstructable forms are mostly bucket and barrel shaped jars and bowls.	Benson *et al*. 1990
Thornwell Farm, Gwent	Large LBA assemblage, mainly post Deveral-Rimbury tradition, characterised by hook-necked jars, straight-necked jars and rims.	Woodward 1996, 44
Tinney's Lane, Sherborne, Dorset	13,839 sherds of LBA Post-Deveral-Rimbury ware.	Best and Woodward 2011, 224
Tremough, Cornwall	LBA Plainware assemblage including 6 vessels, carinated bowls and shouldered jars. Associated with radiocarbon dates from tenth – ninth centuries BC.	Jones *et al.* 2015.
Trewey Down, Cornwall	A few sherds LBA pottery.	Dudley 1941

APPENDIX 5

DETAILS OF NON- HILLTOP SITES

Site	Location	Excavation Date	Site Type	Dating evidence			Settlement evidence	Overview of finds	Reference
				C14/OSL	Material Culture	Typology			
Sharpstone Hill	Shrewsbury Shropshire	1965-71	Settlement with field boundaries		✓		Structures, enclosure, agriculture and occupations layers	Ceramics	Barker *et al.* 1991
Huntsman's Quarry	Kemerton Worcestershire	1995-96	Settlement site – LBA occupation areas and field systems spreading over 8 ha	✓	✓		Structures, craftworking and agriculture	Metalworking, ceramics, plant/animal remains	Jackson and Napthan 1998
Shorncote Quarry	Somerford Keynes Gloucestershire	1992 1995-96	Extensive unenclosed settlement	✓	✓		Structures, craftworking and agriculture	Metal artefacts, metalworking, ceramics, stone artefacts, plant/animal remains	Hearne and Heaton 1994 Brossler *et al.* 2002
Brean Down	Sedgemoor Somerset	1983-87	Midden site	✓	✓		Thick occupation deposits	Metal artefacts, ceramics, stone artefacts, plant/animal remains, worked bone/antler	Bell 2015
Combe Hay	Bath Somerset	1968-73	Settlement site with possible ceramic manufacturing	✓	✓		Craftworking, agriculture and occupation deposits	Ceramics and worked stone artefacts	Price and Watts 1980
Cabot Park Sites	Avonmouth Bristol	1998	Foreshore settlement sites	✓	✓		Agriculture and occupation deposits	Ceramics and worked stone artefacts, animal remains	Locock 2001
Coburg Road	Dorchester Dorset	1988-89	Settlement site		✓		Structures and agriculture	Ceramics, stone artefacts, plant/animal remains, worked bone/antler	Smith *et al.* 1992
Eldon's Seat	Dorset	1968	Midden site	✓	✓		Structures, agriculture, craftworking and occupation deposits	Metal artefacts, ceramics, stone artefacts, animal remains, worked bone/antler	Cunliffe and Phillipson 1969
Hog Cliff Hill	Maiden Newton Dorset	1959-60	Settlement with field boundaries	✓	✓		Structures, enclosure, agriculture and occupation deposits	Ceramics and worked stone artefacts	Ellison and Rahtz 1987
Tinney's Lane	Sherbourne Dorset	2002	Settlement site with ceramic manufacturing	✓	✓		Structures, craftworking, agriculture and occupation deposits	Metal artefacts, ceramics, stone artefacts, plant/animal remains, worked bone/antler	Best and Woodward 2012
Dainton	Miltor Mator Common Devon	1975	Open settlement		✓		Craftworking	Metal artefacts, metalworking, ceramics	Silvester 1980
Gwithian	Hayle Cornwall	1949-69	Settlement site	✓	✓		Structures, craftworking, agriculture and occupation deposits	Metal artefacts, metalworking, ceramics, worked bone/antler	Nowakowski *et al.* 2007

Scarcewater	St Stephen-in-Brannel Cornwall	2004	Palisaded settlement site	✓	✓		Structures, enclosure and agriculture	Worked stone, ceramics, plant remains	Jones and Taylor 2010
Tremough	Penryn Cornwall	2002-04	Enclosed settlement site	✓	✓		Structures, enclosure, craftworking and agriculture	Metalworking, worked stone, ceramics, plant/animal remains	Jones *et al.* 1015
Trewey Down	Trewey Down Cornwall	1941	Settlement site		✓		Structures and agriculture	Ceramics and worked stone artefacts	Dudley 1941
Caldicot Castle Lake	Caldicot Castle Gwent	1988-90	Riverside site with fishing structure	✓	✓		Structures, agriculture and occupation deposits	Metalworking, stone artefacts, ceramics, animal remains, leather working	Nayling 1993
Chapeltrump 1 & 2	Newport Gwent	1986	Foreshore settlement site	✓	✓		Structures and occupation deposits	Worked stone, ceramics, plant remains, worked wood	Whittle *et al.* 1989
Rumney Great Wharf	Wentlooge Level Gwent	1992	Foreshore settlement site	✓	✓		Structures, agriculture and occupation deposits	Ceramics, worked stone and plant remains	Allen 1996
Thornwell Farm	Chepstow Gwent	1992	Settlement site		✓		Structures, agriculture and occupation deposits	Ceramics, worked stone artefacts, animal remains	Hughes 1996
Stackpole Warren	Stackpole Warren Pembrokeshire	1977-79	Enclosed settlement and midden site	✓	✓		Enclosure and occupation deposits	Metal artefacts, ceramics, worked bone/antler	Benson *et al.* 1990